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HONORARY PHILOLOGICAL SECRETARY.

"It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society of Calcutta. It will languish, if such communications shall be long intermitted; and it will die away, if they shall entirely cease." SIR WM. JONES.

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Under orders of the Council the following system of transliteration will be adopted for the future in all publications of the Society. Authors of papers for the *Journal*, Pt. I, are particularly requested to adhere to it in their contributions.

055·1
·002/5

A. FOR THE DĒVANĀGARĪ ALPHABET, AND FOR ALL ALPHABETS RELATED TO IT.

अ *a*, आ *ā*, इ *i*, ई *ī*, उ *u*, ऊ *ū*, ऋ *ṛ*, ॠ *ṝ*, ऌ *ḷ*, ए *e*, ऐ *ai*,
ओ *o*, औ *au*, ं *ṁ*, ँ ˜ : *ḥ*

क *k*,	ख *kh*,	ग *g*,	घ *gh*,	ङ *ṅ*
च *c*,	छ *ch*,	ज *j*,	झ *jh*,	ञ *ñ*
ट *ṭ*,	ठ *ṭh*,	ड *ḍ*,	ढ *ḍh*,	ण *ṇ*
त *t*,	थ *th*,	द *d*,	ध *dh*,	न *n*
प *p*,	फ *ph*,	ब *b*,	भ *bh*,	म *m*
य *y*,	र *r*,	ल *l*,	व *v*,	(ळ *ḷ*)
श *ś*,	ष *ṣ*,	स *s*,	ह *h*.	

In the above the *virāma* has been omitted for the sake of clearness.

In Modern Vernaculars only; ऋ may be represented by *ṛ*, and ढ़ by *ṛh*.

Avagraha is to be represented by an apostrophe, thus सो ऽपि *sō 'pi*. *Visarga* is represented by *ḥ*, *Jihvāmūlīya* by *ḫ*, and *Upadhmānīya* by *ḯ*. *Anusvāra* is represented by *ṁ*, thus संसर्ग *saṁsarga*, and *anunāsika* by the sign ˜ over the letter nasalized, thus ँ *ā*, ाँ *ā̃*, and so on. The *udātta* accent is represented by the sign ´ and the *svarita* by ˆ. Thus, अग्निः *agníḥ*, जनिता *janitā́*, क्व *kvā́*, कन्या *kanyā́*. The *anudātta* accent may be represented by ˋ. Thus, ते अवर्धन्त *tḕ àvardhanta*.

B. FOR PERSIAN (INCLUDING ARABIC WORDS IN PERSIAN) AND HINDŪSTĀNĪ.

(*The system is not applicable to Arabic when pronounced as in Arabic-speaking countries*) :—

Vowels.	Consonants.	Sounds only found in Hindūstānī.
اَ a	ب b	بھ bh
آ ā	پ p	پھ ph
اِ i	ت t	تھ th
اِی ī		ٹ ṭ
اے ē		ٹھ ṭh
اُ u	ث s	
اُو ū	ج j	جھ jh
او ō	چ c	چھ ch

Vowels.		Consonants.		Sounds only found in Hindūstānī.	
اَیْ	ai	ح	ḥ		
اَوْ	au	خ	kh		
		د	d	ڈھ	ḍh
				ڈ	ḍ
				ڑھ	ṛh
		ذ	z		
		ر	r	ڑ	ṛ
		ز	z		
		ژ	zh		
		س	s		
		ش	sh		
		ص	ṣ		
		ض	ẓ		
		ط	ṭ		
		ظ	ẓ		
		ع	‘		
		غ	gh		
		ف	f		
		ق	q		
		ک	k	کھ	kh
		گ	g	گھ	gh
		ل	l		
		م	m		
		ن	n		
		ں	when representing *anunāsika* in Dēva Nāgarī, by ˜ on the preceding vowel		
		و	w (or rarely v)		
		ہ	h		
		ی	y		
		Hamzah ا	(where necessary) ’		

The ل of the article ال in Arabic words should be assimilated before the solar letters; and the vowel *u* which often precedes the article and absorbs its vowel should remain attached to the word to which it belongs. Thus—اقبال الدولة Iqbālu-d-daulah.

Tanwīn may be rendered by *n*—e. g., *ittifāqan*. *Alif-i maqṣūrah* should be rendered by *ā*.

Final ہ need not be written in Persian and Hindūstānī words, but should be written in Arabic words.

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JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL.

Part I.—HISTORY, LITERATURE, &c.

No. I.—1899.

On the Kāçmīrī Verb.—*By* G. A. Grierson, C.I.E., Ph.D., I.C.S.

[Read January, 1899.]

The Kāçmīrī Verb is treated in the *Akhyāta-* and *Kṛdanta-prakriyās* of Īçvara-kaula's *Kaçmīraçabdāmṛta*.

Verbal roots may end either in a consonant or in a vowel. When a root ends in a consonant, the vowel अ *a* is added to assist the pronunciation. Thus the root कर् *kar* is written कर *kar*[a]. It is still, however, considered to be a root ending in a consonant and is referred to as such. The final अ *a* is dropped before adding the conjugational suffixes. For this reason, throughout this series of papers, I shall so far depart from the rule of strict transliteration, that I shall not write the final अ *a* of roots ending in consonants, although that final अ *a* will be written in the Nāgarī character.

When a root ends in a vowel, that vowel is always इ *i*. There are only eight of these roots, of which five belong to the first, and three to the third conjugation, as follows,—

First Conjugation.—छि *khi*, eat; चि *ci*, drink; दि *di*, give; नि *ni*, take; and हि *hi*, take.

Third Conjugation.—ज़ि *zi*, be born; पि *pi*, fall; and यि *yi*, come

As in the above examples, all verbs will be quoted under their root-forms.

Excepting the verbs नि *ni*, take, दि *di*, give, and यि *yi*, come, all verbs whose roots end in vowels change the final इ *i* to य *ya*(ă) throughout (viii. ii. 11). Thus, the present participle of all these verbs is made by adding वान् *wān* to the root. But the present participle of खि *khi*, eat, is ख्यवान् *khyawān*, not खिवान् *khiwān*. On the other hand, the present participle of नि *ni*, take, is निवान् *niwān*, not न्यवान् *nyawān*. This rule is a most important one, and will be met over and over again in the following pages.

Conjugation.

There are three conjugations of verbs. They only differ in the formation of the Causal Voice, and of the past participles and of the tenses derived from them. Their consideration is postponed till these tenses come to be dealt with.

Voice.

There are three voices: the Active, the Passive, and the Causal.

The Active Voice.

This is formed by adding the conjugational suffixes to the root direct according to the rules to be hereafter detailed.

The Passive Voice.

This is formed by conjugating the oblique form of the verbal noun in उन् *un*, that is to say, the shortened form of the Instrumental Singular which is used before post-positions, and which ends in अन *an*ᵃ, with the verb यि *yi*, come, which may either precede or follow. Thus, from the verb कर *kar*, make, the verbal noun is करुन् *karun*. The oblique form of this is करन *karan*ᵃ, and the Passive is करन यि *karan*ᵃ *yi*, be made, literally, come into making. Compare the Hindī देखने में आता है *dēkh'nē mẽ ātā hai*, it comes into seeing, it is seen (viii. i. 49).

Examples of the use of the Passive are (viii. i. 50).

रनन यिवान् छुह बत *ranan*ᵃ *yiwān chuh bat*ᵃ, the rice is coming into cooking, *i.e.*, is being cooked.

पानय् छुद् यिवान् करन *pāna-y chuh yiwān karan*ᵃ, he, himself, is being made.

Even neuter verbs can take the passive form, without, in this case, changing their meaning (viii. i. 51). Thus,—

ज़ोतान् छुद् *zōtān chuh*; or

ज़ोतन यिवान् छुद् *zōtan*ᵃ *yiwān chuh*, he is shining. The latter example is literally, he is coming into shining.

दज़ान् छुद् *dazān chuh*, or

दज़न यिवान् छुद् *dazan*ᵃ *yiwān chuh*, he is burning.

The root बोज़ *bōz*, hear, when used in the passive means 'see (viii. i. 52). Thus,—

बोज़ान् छुद् *bōzān chuh*, he hears, but.

बोज़न यिवान् छुद् *bōzan*ᵃ *yiwān chuh*, he is being seen.

बोज़न आव् *bōzan*ᵃ *āv* (*āv*, is the irregular past tense of *yi*), he was seen.

बोज़न यियि *bōzan*ᵃ *yiyi*, he will be seen.

If we want to express the passive of the verb 'to hear,' we must use a periphrasis. Thus,—

बोज़नस् अन्दर् यिवान् छुद् *bōzanas andar yiwān chuh*, he is coming into hearing, he is being heard.

The root गर *gar*, work metal, may mean 'to become hard' in the Passive (viii. i. 53). Thus,—

गरन यिवान् छुद् *garan*ᵃ *yiwān chuh*, it is being worked, or it is becoming hard.

The root नि *ni*, take, may mean 'to have the attention distracted' in the Passive (viii. i. 55). Thus,—

निन यिवान् छुद् *nin*ᵃ *yiwān chuh*, he is being distracted, or he is being taken.

The root ह्यि *hi*, take, may mean 'to be engaged in' in the Passive (viii. i. 56). Thus, ह्यन यिवान् छुद् *hyan*ᵃ *yiwān chuh*, he is engaged (in a business), or he is being taken.

The root देष *dēṣ*, see, is irregular. Its Passive is formed thus, द्रेठ यिवान् छुद् *drēth yiwān chuh*, he is being seen (viii. i. 54).

In adding this termination ꠅꠔ *an*ª, we must remember that in the case of the verbs ꠘꠤ *ni*, take, ꠇꠤ *di*, give, ꠝꠤ *yi*, come, the first ꠅ *a* is elided (viii. ii. 11). Thus, ꠘꠤꠔ ꠝꠤꠢꠤꠔ ꠍꠣ *ninª yiwān chuh*, he is being taken.

ꠇꠤꠔ ꠝꠤꠢꠤꠔ ꠍꠣ *dinª yiwān chuh*, he is being given.

ꠝꠤꠔ ꠝꠤꠢꠤꠔ ꠍꠣ *yinª yiwān chuh*, it is being come by him, *i.e.*, he is coming. In the case of other verbs ending in ꠤ *i*, that vowel becomes ꠝ *y*. Thus,—

ꠏꠤ *khi*, eat, ꠏꠝꠔ ꠝꠤꠢꠤꠔ ꠍꠣ *khyanª yiwān chuh*, he is being eaten.

ꠉꠤ *hi*, take, ꠉꠝꠔ ꠝꠤꠢꠤꠔ ꠍꠣ *hyanª yiwān chuh*, he is being taken

ꠌꠤ *ci*, drink, ꠝꠔ ꠝꠤꠢꠤꠔ ꠍꠣ *cyanª yiwān chuh*, it is being drunk.

The Causal Voice.

A root is made causal by adding ꠅꠔꠢ *anāw* (viii. iv. 2, 3). Thus, ꠐꠣꠔ *kar*, make; ꠐꠣꠔꠔꠢ *karanāw*, cause to make. So, in the present tense, ꠐꠣꠔꠔ ꠍꠣ *karān chuh*, he makes; ꠐꠣꠔꠔꠢꠔ ꠍꠣ *karanāwān chuh*, he causes to make.

Exceptions—

The root ꠍꠥꠐ *wuph*, fly, is regular. Thus, ꠍꠥꠐꠔꠢꠔ ꠍꠣ *wuphanāwān chuh*, he causes to fly. But when the causal verb means 'to incite,' the *n* is changed to *l* (viii. iv. 4). Thus, ꠍꠥꠐꠤꠤꠢꠔ ꠍꠣ *wuphalāwān chuh*, he incites.

Intransitive roots containing three *akṣaras* omit the ꠅꠔ *an* of ꠅꠔꠢ *anāw* in forming causals (viii. iv. 7). Thus,—

From—

ꠍꠝꠃꠃ *wŏbar*, be finished.	ꠍꠝꠃꠃꠣꠔꠢꠔ ꠍꠣ *wŏbarāwān chuh*, he finishes.
ꠐꠣꠌꠌꠣ *kāṯsar*, be tawny.	ꠐꠣꠌꠌꠣꠔꠢꠔ ꠍꠣ *kāṯsarāwān chuh*, he makes tawny.
ꠐꠥꠝꠤ *kumal*, be tender.	ꠐꠥꠝꠤꠤꠢꠔ ꠍꠣ *kumalāwān chuh*, he makes tender.
ꠌꠣꠏꠃꠣ *cōkhar*, be contracted.	ꠌꠣꠏꠃꠣꠔꠢꠔ ꠍꠣ *cōkharāwān chuh*, he makes contracted.

छ़ाँछ़न *tshā̃tshan*, be light.	छ़ाँछ़नावान् छुह् *tshā̃tshanāwān chuh*, he makes light.
मन्दछ *mandach*, be ashamed.	मन्दछावान् छुह् *mandachāwān chuh*, he makes ashamed.
व्वज़ल *wŏzal*, be red.	व्वज़लावान् छुह् *wŏzalāwān chuh*, he makes red.
समख *samakh*, become visible.	समखावान् छुह् *samakhāwān chuh*, he makes visible.
व्वपज़ *wŏpaz*, be born.	व्वपज़ावान् छुह् *wŏpazāwān chuh*, he produces.

This exception does not apply to transitive verbs, which are regular. Thus,—

कमव *kamav*, earn.	कमवनावान् छुह् *kamavanāwān chuh*, he causes to earn.
कतर *katar*, slice.	कतरनावान् छुह् *kataranāwān chuh*, he causes to cut in slices.
कपट *kapaṭ*, cut (clothes).	कपटनावान् छुह् *kapaṭanāwān chuh*, he causes to cut.

The root वुष्ण *wuṣṇ*, be hot, also drops the अन् *an*. Thus, वुष्णावान् छुह् *wuṣṇāwān chuh*, he makes hot (viii. iv. 8).

The verbs वुज़ *wuz*, be awake; व्वड *bŏḍ*, dive; लार *lār*, touch; पिल *pil*, arrive; कांम्प *kā̃mp*, tremble, and रञ्ज *ranz*, be pleased, add optionally अव् *av*, instead of अनाव् *anāv* (viii. iv. 5, 14). Thus, वुज़वान् छुस् *wuzawān chu-s*, or वुज़नावान् छुस् *wuzanāwān chu-s*, he wakens him. So कांम्पवान् छुस् *kā̃mpawān chu-s*, or कांम्पनावान् छुस् *kā̃mpanāwān chu-s*, he causes him to tremble. The root प्रस *pras*, be born, has three forms (viii. iv. 5, 15); *viz.* प्रसवान् छुह् *prasawān chuh*; प्रसनावान् छुह् *prasanāwān chuh*, and पीनवान् छुह् *pīnawān chuh*, he causes to bear children.

The verb यि *yi*, come, makes its causal अननाव *ananāw*. [This is really the causal of अन *an*, bring]. Thus, अननावान् छुह् *ananāwān chuh*, he causes to bring.

The root फट *phaṭ*, be split, makes its causal फाटवान् छुह् *phāṭawān chuh*, or फाटनावान् छुह् *phāṭanawān chuh* (viii. iv. 17).

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With regard to roots ending in इ *i*, the following are the forms (viii. iv. 9–13).

SIMPLE VERB.	CAUSAL.
पि *pi*, fall.	पावान् छुह् *pāwān chuh*, he causes to fall.
दि *di*, give.	दावान् छुह् *dāwān chuh*, or दिवनावान् छुह् *diwanāwān chuh*, he causes to give.
नि *ni*, take.	न्यावान् छुह् *nyāwān chuh*, or निवनावान् छुह् *niwanāwān chuh*, he causes to take.
चि *ci*, drink.	च्यावान् छुह् *cyāwān chuh*, or च्यावनावान् छुह् *cyāwanāwān chuh*, he gives to drink.
खि *khi*, eat.	ख्यावान् छुह् *khyāwān chuh*, or ख्यावनावान् छुह् *khyāwanāwān chuh*, he gives to eat.
हि *hi*, take.	ह्यावान् छुह् *hyāwān chuh*, or ह्यवनावान् छुह् *hyawanāwān chuh* (sic), he causes to take.

Regarding यि *yi*, come, see *supra*, p. 5.

Regarding जि *zi*, be born, see *post*, p. 9.

Other verbs of the **third conjugation** form their causals by adding **rāw* (viii. iv. 20). Before this,—

if the root vowel is	अ *a*	it becomes	अ॑ *ạ*.
	आ *ā*	„	आ॑ *ạ̄*.
	ए *ē*	„	ई *ī*.
	ओ *ō*	„	ऊ *ū* (viii. iv. 27).

Moreover,—

if the final consonant of the root is	त् *t*	it becomes	त्स् *ts*.
	द् *d*	„	ज़ *z*.
	न् *n* or न्न् *nn*	„	ञ् *ñ* (viii. iv. 25).

[The only root of the third conjugation which ends in थ् *th* is पाथ *pāth*, become, and, according to my Paṇḍit, its causal is regular, पाथनावान् छुए *pāthanāwān chuh*. पाठ्रावान् छुए *pāṭʰrāwān chuh*, is possible, but unusual].

कल *kal*, be dumb.	कल्रावान् छुए *kalʳāwān chuh*, he makes dumb.
गोब *gŏb*, be too heavy.	गोब्रावान् छुए *gŏbarāwān chuh*, he makes too heavy.
व्यठ *vyaṭh*, be fat.	व्यठ्रावान् छुए *vyaṭʰrāwān chuh*, he makes fat.
कान *kān*, be one-eyed.	कांञ्रावान् छुए *kāñʳāwān chuh*, he makes one-eyed.
ठीक *ṭhīk*, stand firmly.	ठीक्रावान् छुए *ṭhīkʳāwān chuh*, he makes to stand firmly.
तेज़ *tēz*, be sharp.	तीज़्रावान् छुए *tīzʳāwān chuh*, he makes sharp.
ब्रेठ *brēṭh*, be a fool.	ब्रीठ्रावान् छुए *brīṭʰrāwān chuh*, he makes foolish.
पोठ *pōṭh*, be fat.	पूठ्रावान् छुए *pūṭʰrāwān chuh*, he makes fat.
लोक *lōk*, be small.	लूक्रावान् छुए *lūkʳāwān chuh*, he makes small.
चत *chat*, be white.	चच़्रावान् छुए *chaṭsʳāwān chuh*, he makes white.
तत *tat*, be hot.	तच़्रावान् छुए *taṭsʳāwān chuh*, he makes hot.
थद *thad*, be high.	थज़्रावान् छुए *thazʳāwān chuh*, he elevates.
शद *çŏd*, be pure.	शज़्रावान् छुए *çŏzʳāwān chuh*, he purifies.
बन *ban*, be.	बञ्रावान् छुए *bañʳāwān chuh*, he causes to be.
तन *tan*, be thin.	तञ्रावान् छुए *tañʳāwān chuh*, he makes thin.

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The verb च़क *tsŏk*, if it means 'be sour,' makes its causal च़ॅक्रावान् छुह् *tsọ̆kᵃrāwān chuh;* but if it means 'be angry,' its causal is च़ुक्रावान् छुह् *tsukᵃrāwān chuh.* The verb खल *khal*, be loose, makes its causal खॅल्रावान् छुह् *khạlᵃrāwān chuh*, or खॅज्रावान् छुह् *khạjᵃrāwān chuh.*

The following verbs form their causals optionally by adding either *anāw*, or *ᵃrāw*, (viii. iv. 19, 21, 22, 23).

First Conjugation: छक *chak*, scatter; छप *chap*, pass time; च़ेन *tsēn*, know by a sign; मान *mān*, confess.

Second Conjugation: च़ल *tsal*, flee; ष्यन्न *tshyann*, be split; थक *thak*, be weary; फस *phas*, be entangled; फुट *phuṭ*, be broken; फ़ल्ल *phŏll*, expand (of a flower); मष *maṣ*, forget; राव *rāv*, be lost; ह्रख *hŏkh*, be dry; ह्रच़ *hŏts*, decay; श्रप *çrap*, be digested.

Third Conjugation: द्यठ *ṭyaṭh*, be bitter.

Thus, च़ीञ्रावान् छुह् *tsīñᵃrāwān chuh*, or च़ेननावान् छुह् *tsēnanāwān chuh;* च़ॅल्रावान् छुह् *tsạlᵃrāwān chuh*, or च़लनावान् छुह् *tsalanāwān chuh;* द्यॅठ्रावान् छुह् *ṭyạṭhᵃrāwān chuh*, or द्यठनावान् छुह् *ṭyaṭhanāwān chuh.*

The root छक *chak* does not alter its meaning in the causal in *ᵃrāw.* Thus, छकान् छुह् *chakān chuh*, छॅक्रावान् छुह् *chạkᵃrāwān chuh*, both mean 'he scatters.' To give a causal meaning it has छकनावान् छुह् *chakanāwān chuh*, or छॅक्रनावान् छुह् *chạkᵃranāwān chuh.*

The root छप *chap* has for its causal छॅप्रावान् छुह् *chạpᵃrāwān chuh*, छपनावान् छुह् *chapanāwān chuh*, or छॅप्रावान् छुह् *chọ̆pᵃrāwān chuh.*

The following verbs of the third conjugation form their causals in *anāw*, and not in *ᵃrāw* (viii. iv. 17). कच़ *kᵃts*, be wet; ग्वह *gŏh*, shine; ग्रक *grak*, boil over; ज़ोत *zōt*, shine; ट्क *ṭᵃk*, run; तेल *tēl*, smart; तोष *tōṣ*, be satisfied (according to my Paṇḍit, this verb belongs to the 2nd conjugation); दोर *dōr*, run; नॉप *nā̃p*, shine; नील *nīl*, become blue; पिस *pis*, boil over; पेड *pēḍ*, exude; पोर *pōr*, be competent; प्रार *prār*, wait (according to my Paṇḍit, this verb belongs to the 2nd conjugation); फब *phab*, be excellent; फर *phar*, be stolen; फल *phal*, become old (of clothes); फुश *phuç* or फुह *phuh*, be inwardly angry; फेर *phēr*, go round; फोर *phōr*, quiver (according to my Paṇḍit, this verb belongs

to the 2nd conjugation); बाद् *bād*, be powerful; बास *bās*, become clear (according to my Paṇḍit, this verb belongs to the 2nd conjugation); बुड *buḍ*, be old: ब्रज़ *braz*, shine; याप *yāp*, pervade; रंब *ramb*, be beautiful; रस *ras*, be full of juice; रोच्छ *rōṯs*, be preferred; रोट *rōṭ*, be stopped; र्‌ड *r°ḍ*, persistently follow; र्‌ष *r°ṇ*, be worn out; ल्यड *lyaḍ*, be conquered; ल्वार *lōr*, become deficient. Thus, क्‌च्छनावान् छुह् *k°ṯsanāwān chuh*, not क्‌च्छरावान् छुह् *k°ṯs°rāwān chuh*.

All causal verbs in *°rāw*, may optionally drop the syllable *āw* in the termination, and add *°r* instead of *°rāw* (viii. iv. 24). Thus,—

Instead of—	We may have—
कॅल्‌रावान् छुह् *kaḷ°rāwān chuh*	कॅल्‌रान् छुह् *kaḷ°rān chuh*
ग्वॅब्‌रावान् छुह् *gŏb°rāwān chuh*	ग्वॅब्‌रान् छुह् *gŏb°rān chuh*
च्वॅक्‌रावान् छुह् *ṯsŏk°rāwān chuh*	च्वॅक्‌रान् छुह् *ṯsŏk°rān chuh*

and so on.

The following verbs form their causals by merely lengthening their root vowels (viii. iv. 28).

तर *tar*, be crossed.	Causal	तारान् छुह् *tārān chuh*, he crosses.
मर *mar*, die.		मारान् छुह् *mārān chuh*, he kills.
डल *ḍal*, pass over.		डालान् छुह् *ḍālān chuh*, he causes to pass over.
लग *lag*, be with.		लागान् छुह् *lāgān chuh*, he unites.

When मर *mar* (18, 28), means 'unite,' and when लग *lag* (28) means 'suffer pain,' or 'fit,' they are regular. Thus, मरनावान् छुह् *maranāwān chuh*, he causes to unite; लगनावान् छुह् *laganāwān chuh*, he causes to suffer pain.

The following are quite irregular,—

ज़ि *zi*, be born.	Causal	ज़ोव्‌रान् छुह् *zōv°rān chuh*, he brings forth (26).
खस *khas*, ascend.		खारान् छुह् *khārān chuh*, he causes to ascend (29).
वस *vas*, descend.		वारान् छुह् *wārān chuh*, he brings down (29).

꣛꣙꣭ *çŏŋg*, go to sleep.

꣘꣭ *daz*, burn.

꣘꣞ *ḍēṣ*, see.

꣜꣡ *gatsh*.

꣚꣭ *wŏth*, rise.

꣜꣡꣭꣟꣤꣭꣟ *sāwān chuh*, he puts to sleep (30).

꣘꣡꣭꣟꣤꣭꣟ *zālān chuh*, he burns (act.) (31).

꣜꣡꣭꣟꣤꣭꣟ *hāwān chuh*, he shows (32).

꣜꣡꣭꣟꣤꣭꣟ *pakanāwān chuh*, he drives.

꣜꣡꣭꣟꣤꣭꣟ *gatshanāwān chuh*, he despatches (33).

Thus, ꣜꣡꣭꣟꣤꣭꣟ *gōv^{a}n pakanāwān chuh*, he drives the cows;

꣜꣡꣭꣟꣤꣭꣟ *gaŋgāy^{a} gatshanāwān chu-s*, he sends him to the Ganges.

꣚꣭ *tulān chuh*, he raises, he lifts up; but ꣚꣭꣟꣤꣭꣟ *wŏthanāwān chuh*, he causes so and so to rise (34).

Verbal Suffixes.

Before proceeding to the consideration of the conjugation of the verb, it is necessary to describe in detail one remarkable feature of the Kāçmīrī language, which it shares with other languages of the North-Western group of the Indo-Aryan Vernaculars, namely, the facility with which the meaning of the verbal stem can be modified by the addition of suffixes. Indeed, it may be said that, given the form of a tense-stem, there is usually no conjugation, in the proper sense of the word, at all. In most cases, suffixes, which may be added, or detached, at pleasure, and most of which have an independent recognised existence, are added, and give the various modifications of meaning which we designate number and person, or of negation, affirmation, and so on, by forming true compound words, and without becoming merged in the base in the form of terminations. Thus, take the word ꣘꣭ *kaṛ^{a}*. This means 'made,' and may mean, 'made by me,' 'made by us,' 'made by him' and so on. That is to say, it means, 'I made,' 'we made,' 'he made,' &c. If we wish to lay stress on the person who made, we may say ꣚꣡꣭꣟ ꣘꣭ *tam^{i} kaṛ^{a}*, 'by him made,' *i.e.*, 'he made.' Instead, however of using ꣚꣡꣭꣟ *tam^{i}*, the instrumental singular of the third

personal pronoun, in Kāçmīrī we may optionally add the suffix न् *n*, which means 'by him,' just as much as तॅमि *tąm*[i] does, and we get कॅरन् *kąru-n*, which also means 'made by him,' or 'he made.' Suppose we want to express who was made by him, and that the person is the speaker, then we can say बुछ् कॅरन् *bŏh kąru-n*, 'I was made by him,' *i.e.*, 'he made me.' Instead, however, of बुछ् *bŏh*, we may add the suffix अस् *as*, which means 'I.' We thus get कॅर्नस् *kąr*[u]*-n-as*, 'I was made by him,' *i.e.*, 'he made me.' Again, if we wish to emphasise the fact that I was the person made, we can add the suffix ति *ti*, and we get the form कॅर्नस्ति *kąr*[u]*-n-as-ti*, which means, 'I also was made by him,' 'he made me also.' Again, if we want to make the verb interrogative, we can add, after all these, the interrogative particle, आ *ā*, thus, कॅर्नस्त्या *kąr*[u]*-n-as-ty-ā*, 'was I also made by him?' 'did he make me also?'

The above examples will show the freedom with which these suffixes are used in Kāshmīrī. They can be combined almost *ad infinitum*. These suffixes may be divided into two classes, adverbial and pronominal, and in this order, I now proceed to discuss them.

Adverbial Suffixes.

These suffixes are added to all verbs. Before all these the final छ् *h* of a verbal form is elided (iv. 131). The ordinary rules of *sandhi* also occur. Thus *i* and *u* before *ā* become *y* and *w* respectively, *ya* (*ĕ*) + *ā* becomes *yā*, and *a* + *ā* becomes *ā*.

1. न *n*[a]. This negatives the verb (viii. i. 13). Thus,—

करान् छुछ् *karān chuh*, he makes.	करान् छुन *karān chun*[a], he does not make.
करान् छिछ् *karān chih*, they make.	करान् छिन *karān chin*[a], they do not make.
करान् च्छ् *karān chĕh*, she makes.	करान् च्छन *karān chĕn*[a], she does not make.
करान् च्छ्य् *karān chĕkh*, thou (fem.) makest.	करान् च्छ्यन *karān chĕkhn*[a], thou dost not make.
करि *kari*, he will make.	करिन *karin*[a], he will not make.
गयोव् *gayōv*, he went.	गयोव्न *gayōvn*[a], he did not go.
पॅक् *pąk*[a], he went.	पॅकन *pąk*[a]*n*[a], he did not go.

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2. आ *ā*. This gives an interrogative force to the verb (viii. i. 14). Thus,—

करान् छुह् *karān chuh*, he makes.	करान् छ्वा (for छुह्+आ, छु+आ) *karān chwā*, does he make?
करान् छ्यह् *karān chĕh* (lit. *chyah*), she makes.	करान् छ्या *karān chyā*, does she make?
करि *kari*, he will make.	कर्या *karyā*, will he make?
परव् *parav*, we shall read.	परवा *parawā*, shall we read?
कर्योन् *karyōn*, he made.	कर्योना *karyōnā*, made he?
क॑रुन् *kạrun*, he made.	क॑रुना *kạrᵘnā*, made he?
गयोव् *gayōv*, he went.	गयोवा *gayōvā*, did he go?
प॑कु *pạkᵘ*, he went.	प॑कुआ *pạkᵘā*, did he go?

In the first and third persons Feminine, अय् *ay* is substituted for आ *ā*, when the person addressed is a woman. If a man is addressed, अ ᵃ is used in the first person Singular, and आ *ā* in the first person Plural, and in the third person.

Thus, करान् छ्यस *karān chĕsᵃ*, am I (fem.) making? here a man is addressed. If a woman is addressed, the speaker would say छ्यसय् *chĕsay*.

करान् छ्या असि *karān chyā* (*chĕh* + *ā*) *ạsⁱ*, are we (fem.) making? If a woman is addressed, the speaker must say छ्यय् *chĕy*. See No. 4.

3. अ ᵃ. This may be substituted for आ *ā*, in the following cases.

(*a*) In the first person Singular Masculine (viii. i. 15) Thus,—

करान् छुस् *karān chus*, I make.	करान् छुस *karān chusᵃ* (instead of करान् छुसा *karān chusā*), am I making?

(*b*) Always in the first person Singular Feminine, when a man is addressed (viii. i. 17). Thus,—

करान् छ्यस् *karān chĕs*, I (fem.) make.	करान् छ्यस *karān chĕsᵃ*, am I (fem.) making? Here the speaker is addressing a man. If she was addressing a woman she would say करान् छ्यसय् *karān chĕsay*.

(*c*) Honorifically in the second person Singular and Plural (viii. i. 15).

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करान् छुख् *karān chukh*, thou makest.	करान् छुख *karān chukh*^{a}, does Your Honour make?
करान् छिव *karān chiw*^{a}, you make.	करान् छिव *karān chiw*^{a}, do your Honours make? Note here that the vowel remains short.

4. अय् *ay* or, after a vowel, य् *y*. Used as follows, instead of आ *ā* or अ ^{a}.

(*a*) In the first person Singular and Plural Feminine, and in the third person Singular and Plural Feminine (viii. i. 17, 18), when a woman is addressed. Thus,—

करान् छ्यस् *karān chĕs*, I (fem.) make.	करान् छ्यसय् *karān chĕsay* am I (fem.) making? Here the speaker is addressing a woman. If she were addressing a man, she would say करान् छ्यस *karān chĕs*^{a}.
करान् छ्यह् अ॑सि *kārān chĕh ạs*^{i}, we (fem.) make.	करान् छ्यय् अ॑सि *karān chĕy ạs*^{i}, are we (fem.) making?
करान् छ्यह् स्वह् *karān chĕh sŏh*, she makes.	करान् छ्यय् स्वह् *karān chĕy sŏh*, is she (fem.) making?
करान् छ्यह् तिम *karān chĕh tim*^{a}, they (fem.) make.	करान् छ्यय् तिम *karān chĕy tim*^{a}, are they (fem.) making?

In the three last, the speaker is also addressing a woman. If she were addressing a man, she would say छ्या *chyā*, instead of छ्यय् *chĕy*.

(*b*) In the second person Feminine optionally instead of अ *a*, when a woman is addressed honorifically (viii. i. 16). Thus,—

करान् छ्यख् *karān chĕkh*, thou (fem.) makest.	करान् छ्यखय् *karān chĕkhay*, or करान् छ्यख *karān chĕkh*^{a}, is Your Honour (fem.) making? Here the speaker is necessarily addressing a woman.
करान् छ्यव *karān chĕw*^{a}, you (fem.) make.	करान् छ्यवय् *karān chĕway*, or करान् छ्यव *karān chĕw*^{a}, are Your Honours (fem.) making? The speaker is again addressing women.

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5. ति *ti* (iv. 179). This suffix is used to signify 'also,' 'indeed.' Thus,—

करान् छुह् *karān chuh*, he makes.	करान् छुति *karān chuti*, he makes also.
करि *kari*, he will make.	करिति *kariti*, he will indeed make.

6. ना *nā*, नय् *nay* (viii. i. 14, 16). This is a compound of न n^a (No. 1) and आ *ā* (No. 2) or अ ^{a} (No. 3), or of न n^a, and अय् (No. 4). It gives the force of an interrogative negative, and is used like the separate parts. Thus,—

करान् छुह् *karān chuh*, he makes.	करान् छुना *karān chunā*, does he not make?

So करान् छ्यना *karān chĕnā*, does she not make?

कर्योन् *karyōn*, he made.	कर्योन्ना *karyōnnā*, did he not make?
करि *kari*, he will make.	करिना *karinā*, will he not make?
करान् छ्यख् *karān chĕkh*, thou (fem.) makest.	करान् छ्यख्ना *karān chĕkhnā*, dost thou (fem.) not make? करान् छ्यख्नय् *karān chĕkhnay*, does Your Honour (fem.) not make?
करान् छ्यव *karān chĕw^a*, you (fem.) make.	करान् छ्यवना *karān chĕw^{a}nā*, do you (fem.) not do? or करान् छ्यवनय् *karān chĕw^{a}nay*, do Your Honours (fem.) not make?

7. त्या *tyā* or त्यय् *tyay*. This is a combination of ति *ti*, (No. 5) and आ *ā* (No. 2), or अय् *ay* (No. 4). It implies a question with emphasis (viii. i. 14). Thus,—

करान् छुत्या *karān chutyā*, does he *make* (it)?

कर्योन्त्या *karyōntyā*, did he *make* (it)?

करित्या *karityā*, will he *make* (it)?

करान् छ्यवत्यय् *karān chĕw^{a}tyay*, do Your Honours (fem.) *make* (it)?

8. सन *san^a*, सना *sanā*, आसन *āsan^a*, used in a question with doubt. If there is an interrogative word also in the sentence, it is added to it. Otherwise it is added to the verb. [सना *sanā* is not used with a verb].

The आ *ā* of सना *sanā* and आसन *āsanª*, is suffix No. 2 already described (viii. i. 25, 28). Thus,—

ख्यवान् छ्वासन *khyawān chwāsanª* (*chuh*+*āsanª*), is he really eating?

क्यासन ख्यवान् छ्व *kyāsanª* (*kyāh*+*sanª*) *khyawān chwā*, what, is he really eating?

क्यासना ख्यवान् छुह् *kyāsanā khyawān chuh*, what, is he eating?

वट कैत्यासन आसान् छिह् *batª kaityāsanª* (*kaitⁱ*+*āsanª*) *āsān chih* how many brahmans are there really?

कर्सना बाँग यिवान् छुह् *karsanā bāgⁱ yiwān chuh*, at what hour is he coming? (*kar*=when? बाँग *bāgⁱ*=Skr. *bhāga*, a portion of the day or night).

कर्सना यिथि *karsanā yiyi*, when will he come?

कूँतिसना आसहान् *kūtⁱsanā āsahān*, how many may there be?

कतिसना ओस *katisanā ōsª*, where was he?

9. सा *sā*. This is the vocative particle (*vide ante*, Vol. lxvii, p. 92). It is used exactly like सन *sanª*. Thus,—

कैत्यासा लूख् आसि *kaityāsā* (*kaitⁱ*+*ā-sā*) *lūkh āsⁱ*, how many people were there?

Pronominal Suffixes.

1. Before these as before all other suffixes, the final ह् *h* of a verb is elided (iv. 131). So also, an initial अ *a* of a suffix is elided when the verb, either after the elision of ह् *h* or not, ends in a vowel (viii. i. 39). Thus, छुह्+अम् *chuh*+*am* becomes first छु+अम् *chu*+*am*, and then छु+म् *chu*+*m*=छुम् *chum*, there is to me.

2. If the final ख् *kh* of a suffix is followed by another pronominal (not an adverbial) suffix commencing with a vowel, the ख् *kh* becomes ह् *h* (viii. i. 38). Thus,—

करान् छुहस् *karān chu-h-as* (for *chu-kh*+*as*), thou makest for him.

करान् छुहख् *karān chu-h-akh*, thou makest for them.

3. The termination अव् *av* becomes ओ *ō* before suffixes (viii. ii. 18). Thus,—

करोथ् *karō-th* (*karav*+*ath*), we shall make thee.

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4. The termination इव् *iv* becomes यू *yū* before suffixes. Thus,—

कर्यूम् *karyū-m* (for *kariv + am*), make ye for me, or make ye me.

When suffixes are added to the root direct, in the second singular imperative, a उ *u* is inserted (viii. i. 16). Thus,—

कर *kar*, make thou. करुम् *karu-m*, make thou for me, or make me.

When suffixes are added to the 3rd person singular of the Future, indicative, the अ *a* of the suffix is not elided. Thus, करि *kari*, he will make, कर्यस् *kary-as*, not करिस् *kari-s*, he will make for him. This does not hold with the suffixes of the second person. Thus, करिय् *kari-y*, he will make for thee, करिव *kari-w*^{a}, he will make for you.

[When interrogative and other adverbial suffixes are added to the verb, they follow the pronominal suffix. *E.g.*, छुमा *chu-m-ā*, is there to me? So छुमासन *chu-m-āsan*^{a}, &c.].

Some verbs are never used without pronominal suffixes of the dative case (viii. i. 45). These are,—

च़र *tsar*, be inwardly wrathful.

फ़श *phŏç*, be inwardly wrathful.

फुह *phuh*, be inwardly wrathful.

मर्च़ *marts*, be inwardly wrathful.

वुच़ *wuts*, be burnt.

फिच़ *phits*, forget.

त्यंब *tyamb*, look eagerly (viii. iii. 45).

Moreover these verbs are always conjugated in the feminine, whether the subject is masculine or feminine. They are then used as impersonal verbs. Thus,—

च़रान् अस् *tsarān chĕ-s*, lit. there is inward anger to him. *I.e.*, he is inwardly angry.

Similarly, फ़शान् अस् *phŏçān chĕ-s*, फुहान् अस् *phuhān chĕ-s*, मर्च़ान् अस् *martsān chĕ-s*. Again च़रान् अम् *tsarān chĕ-m*, there is inward anger to me, I am inwardly angry, and so on. Again, वुच़ान् अस् *wutsān chĕ-s*, there is burning to him, *i.e.*, he is burning (inwardly); फिच़ान् अस् *phitsān chĕ-s*, there is forgetfulness to him, he forgets: त्यंबान् अस् *tyambān chĕ-s*, he looks eagerly.

Sometimes full pronouns are used instead of suffixes (viii. i. 46). Thus,—

तमिस् च्रान् छह् *tamis ʦarān chĕh*, there is inward anger to him.

The verb गट्श *gaʦsh*, be proper, be desirable, is also used with the dative (viii. i. 47). Thus,—

तमिस् गट्शान् छुह् ज़ि परह़ा *tamis gaʦshān chuh zi parahā̤*, to him it is desirable that I should read. He thinks it proper that I should read. This is only in the third person. For the other persons always, and for the third person optionally, suffixes are used when they exist (viii. i. 48). Thus,—

गट्शान् छुम् *gaʦshān chu-m*, it is proper for me.

गट्शान् छुह् *gaʦshān chuh* (no suffix), it is proper for us.

गट्शान् छुय् *gaʦshān chu-y*, it is proper for thee.

गट्शान् छुव *gaʦshān chu-w*[a], it is proper for you.

गट्शान् छुस् *gaʦshān chu-s*, it is proper for him.

गट्शान् छुख् *gaʦshān chu-kh*, it is proper for them.

This applies only to the present tense.

First Person.

The suffix of the *Nominative Singular* is अस् *as*, which is not used with the Future tense (viii. i. 43). Thus,—

करान् छुस् *karān chu-s*, I make.

पॅकुस् *pa̤ku-s*, I went.

कर्यॅनस् *karyō-n-as*, I (*as*) was made (*karyō*) by him (*an*). *I.e.*, he made me.

But कर *kar*[a], not करस् *kara-s*, I shall make. करस् *kara-s* means 'I shall make for him' (*vide post*, third person).

For *other cases of the singular*, the suffix is अम् *am* (viii. i. 24). Thus,—

करान् छुम् *karān chu-m*, he makes me, or for me.

करान छिम् *karān chi-m*, they make me, or for me.

कॅरुम् *ka̤ru-m*, made by me, I made.

There are no *Plural Suffixes* of the first person: the full pronouns are used instead (viii. i. 44). Thus,—

करान् छुह् असॅ *karān chuh asĕ*, he makes us, and so on.

Second Person.

For the *Nominative Singular* the suffix is ख् *akh*, which is used as follows (viii. i. 36). Thus,—

करान् छुख् *karān chhu-kh*, thou makest.

करख् *kara-kh*, thou wilt make.

करहांख् *karahā̃-kh*, (if) thou hadst made.

पकुख् *paku-kh*, thou wentest.

कर्मख् *kar^{a}-m-akh*, thou wast made by me, *i.e.*, I made thee.

कर्यानख् *karyō-n-akh*, thou wast made by him, *i.e.*, he made thee.

For the *Accusative Singular*, थ् *ath* is used in the first person singular and plural (viii. i. 37). Thus,—

करथ् *kara-th*, I shall make thee.

करोथ् *karō-th* (*karav*+*ath*), we shall make thee.

करान् छुसथ् *karān chu-s-ath*, I make thee.

करान् छिथ *karān chi-th*, we make thee.

We cannot use this suffix with the third person. Thus, we cannot say करिथ् *kari-th*, he will make thee. We must use instead the suffix य् *ay*, which properly belongs to the Dative. Thus,—

सुह् करिय् *suh kari-y*, he will make thee, or for thee.

तिम् करनय् *tim karan-ay*, they will make thee, or for thee.

सुह् करान् छुय् *suh karān chu-y*, he makes thee, or for thee.

तिम् करान् छिय् *tim karān chi-y*, they make thee, or for thee.

The same suffix (थ् *ath*) is also used for the *Agent Singular* with the past tenses of transitive verbs. Thus,—

कर्थ् *kar^{u}-th*, made by thee, *i.e.*, thou madest.

कर्योथ् *karyō-th*, made by thee, *i.e.*, thou madest.

For the *Dative Singular* and also (when the verb is in the third person) for the *Accusative Singular*, the suffix य् *ay* is used (viii. i. 40). Thus,—

करान् छुय् *karān chu-y*, he makes for thee, or thee.

करान् छुसय् *karān chu-s-ay*, I make for thee.

करान् छिय् *karān chi-y*, we make for thee.

करान् छिय् *karān chi-y*, they make for thee, or thee.

करिय् *kari-y*, he will make for thee, or thee.

This form is liable to certain changes in the Aorist and Pluperfect tenses of verbs. These will be found duly explained in the proper place. With the Past Conditional this suffix may have the force of the Accusative.

For all cases of the *Plural*, the suffix is व *w*ª. Thus,—

Nominative—

करान् छिव *karān chi-w*ª, you make.

Accusative or *Dative*—

करान् छुव *karān chu-w*ª, he makes you, or for you.

करान् छिव *karān chi-w*ª, they make you, or for you.

करान् छुस्व *karān chu-s-w*ª, I make you, or for you.

Agent—

कर्व *karª-w*ª, made by you, you made.

THIRD PERSON.

There is no pronominal suffix of the *Nominative Singular or Plural*.

The pronominal suffix of the *Dative Singular* is अस् *as* (viii. i. 33). Thus,—(masculine).

करान् छुसस् *karān chu-s-as*, I make for him.

करान् छुखस् *karān chu-h-as* (*chu-kh* + *as*, thou makest for him.

करान् छुस् *karān chu-s*, he makes for him.

करान् छिस् *karān chi-s*, we make for him.

करान् छिवस् *karān chi-wa-s*, you make for him.

करान् छिस् *karān chi-s*, they make for him.

करस् *kara-s*, I shall make for him.

So also for the feminine, करान् चसस् *karān che-s-as*.

[This suffix is also used for the *Accusative*, when the verb is in the third person. Thus, करान् छुस *karān chu-s*, he makes him, करान् छिस् *karān chi-s*, they make him].

For other oblique cases of the singular, अन् *an* is used (viii. i. 34). Thus,—

Accusative—

करान् छुखन *karān chu-h-an* (*chu-kh* + *an*), you make him.

ख्यान् छुखन् *khyawān chu-h-an*, you eat him.

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अस *as* is however, used for अन् *an* with the third person. Thus, करान् छुस् *karān chu-s*, not करान् छुन् *karān chu-n*, he makes him.

Agent —

क॑रुन् *kạru-n* (क॑रु् *kạr*^{u} + अन् *an*), made by him, he made.

For all cases of the plural, the suffix is अख् *akh* (viii. i. 35). Thus,—

करान् छुसख् *karān chu-s-akh*, I make for them, or I make them.

करान् छुख् *karān chu-kh*, he makes for them, or makes them.

क॑रुख *kạru-kh*, made by them, they made.

Moods and Tenses.

The Kāçmīrī verb has four Moods, *viz.*, the Indicative, the Imperative, the Benedictive, and the Conditional.

The Indicative Mood is usually credited with eight tenses, *viz.*,—

1. The Present.
2. The Imperfect.
3. The Future.
4. The Past.
5. The Aorist.
6. The Pluperfect.
7. The Perfect.
8. The Periphrastic Pluperfect.

Of these, Nos. 2, 7, and 8, are not discussed by Īçvara-kaula in his grammar. I shall, however, give short notices of them for the sake of completeness. Nos. 1, 2, 7, and 8, are all periphrastic tenses, made up of Participles conjugated with auxiliary verbs. In No. 1, the Present participle is conjugated with the Present tense of the auxiliary verb, and in No. 2, it is conjugated with the Past tense of the same. In No. 7, the Past participle is conjugated with the Present tense of the same verb, and in No. 8, with its Past tense.

The Imperative Mood has three tenses, *viz.*,—

1. The Present.
2. The Future.
3. The Past.

The Present Imperative has two forms, a Simple, and a Modified.

The Benedictive Mood has one tense, which may be called the Future.

The Conditional Mood has two tenses, *viz.*,—

1. A Present-Future. This is the same in form as the Future Indicative.
2. A Past.

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Other tenses may be manufactured on the analogy of Hindī, but they are not in frequent use. Thus, सुह करान् आसि *suh karān āsi*, equivalent to the Hindī वह करता होगा *wah kar'tā hóga*, he will (probably) be making. It is unnecessary to make a list of these. They can be made up as required.

Some verbs are irregular in the use of their tenses. These are the following.

The root ज़ान *zān*, know, when it means to know how to do a thing, uses the Future in the sense of the Present (viii. i. 58). Thus,—

करन् ज़ानि *karun zāni*, he knows how to make a thing.

परन् ज़ानन् *parun zānan*, they know how to read.

So also, स्यठाह् ज़ानि *syaṭhāh zāni*, he knows a great deal.

विद्या ज़ानि *vidyā zāni*, he is a learned man (lit. he knows knowledge).

In the same way, in writing the ceremonial part of a letter, a past tense is sometimes used instead of the imperative. Thus, तमिस् ल्यूख्थ् सोन् नमस्कार् *tamis lyūkhu-th sōn*[u] *namaskār*, to him was there written-by-thee our compliment, *i.e.*, write our compliments to him.

The root पाथ *pāth*, be, become, has no regular Present; and uses the Future for that tense (viii. i. 59). Thus,—

पाथ *pāth*[a], I am.	पाथव् *pāthaw*, we are.
पाथख् *pāthakh*, thou art.	पाथिव् *pāthiv*, you are.
पाथि *pāthi*, he is.	पाथन् *pāthan*, they are.

For the Past tense, the following forms are used.

1 पाथह्यां *pāthahą̄*, I was.	पाथह्यांव् *pathahą̄v*, we were.
2 पाथह्यांख् *pāthahą̄kh*, thou wast.	पाथिह्यांव् *pāṭh*[i]*hīv*, you were.
3 पाथिह्ये *pāthihē*, he was.	पाथह्यान् *pāthahą̄n*, they were.

These forms are properly those of the Past Conditional. This verb has no verbal nouns.

Gender, Number and Person.

Gender.

The verb has two Genders, Masculine and Feminine. The Future Indicative, and the Imperative, Benedictive, and Conditional Moods, do not however, make any change for Gender. Their Masculine and Feminine forms are identical.

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Some verbs are conjugated only in the Feminine. They are all impersonal. They are,—

च़र *tsar*, be inwardly wrathful (viii. i. 45).

फ़श *phŏç*, be inwardly wrathful.

फुह *phuh*, be inwardly wrathful.

मर्च *marts*, be inwardly wrathful.

वुच़ *wuts*, be burnt.

फिच़ *phits*, forget.

त्यंब *tyamb*, look eagerly, (viii. iii. 45).

चुव *tsuv*, quarrel (viii. iii. 9). } These two are feminine and impersonal in the past tenses only.
मोरव *mōrav*, bear pain.

The peculiarities of these verbs will be found described in the proper places. The first six form one group, which is known as the च़रादि *tsarādi*, or '*tsar* and the others,' which will be frequently met with in the course of this article.

Number. There are two numbers,—singular and plural (viii. i. 4). There is no dual. तिम् छिह् परान् *tim chih parān*, means 'they two,' or 'they (many) are reading.'

Person. There are three persons,—first, second, and third (viii. i. 3).

The first person is more worthy than the second, and the second than the third (viii. i. 5).

Thus, सुह् त च़्ह् परिव् *suh t^a ts^ah pariv*, do thou and he read (imperative).

च़्ह् त ब़ुह् परव् *ts^ah t^a bŏh parav*, let thee and me read.

सुह् त ब़ुह् परव् *suh t^a bŏh parav*, let him and me read.

सुह् त च़्ह् त ब़ुह् परव् *suh t^a ts^ah ta bŏh parav*, let him and thee and me read.

Auxiliary Verbs, and Verbs Substantive.

There are many verbs meaning 'to be' in Kāçmīrī. The following are the two commonest forms, and they are used not only as verbs substantive, but also as auxiliary verbs.

PRESENT. I am (viii. i. 11, 12).

	SINGULAR.		PLURAL.	
Person.	Masculine.	Feminine.	Masculine.	Feminine.
1	ꣀ꣔ꣵ *chu-s.*	ꣀ꣘ꣵ *chĕ-s.*	ꣀ꣤ꣵ *chih.*	ꣀ꣘ꣵ *chĕh.*
2	ꣀ꣔ꣴ *chu-kh.*	ꣀ꣘ꣴ *chĕ-kh.*	ꣀ꣤ꣷ *chi-wª.*	ꣀ꣘ꣷ *chĕ-wª.*
3	ꣀ꣔ꣵ *chuh.*	ꣀ꣘ꣵ *chĕh.*	ꣀ꣤ꣵ *chih.*	ꣀ꣘ꣵ *chĕh.*

Negative form ꣀ꣔ꣵ꣤ꣴ *chu-s-nª*, &c., see p. 11.

Interrogative form ꣀ꣔ꣵ꣡ *chu-s-ā*, ꣀ꣔ꣵ꣢ *chu-sª*, &c., see p. 12.

Negative-interrogative form ꣀ꣔ꣵ꣤ꣴ꣡ *chu-s-nā*, see p. 14.

Emphatic form ꣀ꣔ꣵ꣥꣤꣥ *chu-s-ti*, see p. 14.

Emphatic-interrogative form ꣀ꣔ꣵ꣥꣤꣥꣡ *chu-s-ty-ā*, see p. 14.

PAST. It was.

	SINGULAR.		PLURAL.	
Person.	Masculine.	Feminine.	Masculine.	Feminine.
1	꣑꣔ꣵꣵ *ōsu-s.*	꣑꣡ꣵꣵ *ā̤sª-s.*	꣑꣡꣤ꣵ *ā̤sⁱ.*	꣑꣡ꣵꣵ *āsª.*
2	꣑꣔ꣵꣴ *ōsu-kh.*	꣑꣡ꣵꣴ *ā̤sª-kh.*	꣑꣡꣤ꣷ *ā̤sⁱ-wª.*	꣑꣡ꣵꣷ *āsª-wª.*
3	꣑꣔ꣵ *ōsᵘ.*	꣑꣡ꣵ *ā̤sª.*	꣑꣡꣤ꣵ *ā̤sⁱ.*	꣑꣡ꣵꣵ *āsª.*

Negative form ꣑꣔ꣵꣵ꣤ꣴ *ōsu-s-nª*, &c., see p. 11.

Interrogative form ꣑꣔ꣵꣵ꣡ *ōsu-s-ā*, &c., see p. 12.

Negative-interrogative form ꣑꣔ꣵꣵ꣤ꣴ꣡ *ōsu-s-nā*, &c., see p. 14.

Emphatic form ꣑꣔ꣵꣵ꣥꣤꣥ *ōsu-s-ti*, &c., see p. 14.

Emphatic-interrogative form ꣑꣔ꣵꣵ꣥꣤꣥꣡ *ōsu-s-ty-ā*, &c., see p. 14.

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These verbs take the usual pronominal suffixes. The following are examples.

सुह् छुम् *suh chu-m*, he is to me, *est mihi*, I have him.

स छ्यय् *s*ᵃ *chĕ-y*, she is to thee, thou hast her.

तिम् छिस् *tim chi-s*, they are to him, he has them.

सुह् ओसुम *suh ōsu-m*, he was to me, I had him.

स आ॑सूस् *s*ᵃ *ā̤s*ᵘ*-s*, she was to him, he had her.

Any other tenses required of the auxiliary verb are formed (like the past) regularly from the root आस *ās*, be. Thus, Future आसि *āsi*, he will be. It is unnecessary to give these forms.

THE

CONJUGATION

OF THE

ACTIVE VERB.

Verbal Nouns.

THE INFINITIVE. This is formed by adding उन् *un*, उनू *un*^{a}, or ऑन् ॰ *ạn*^{a} to the root. It is an abstract noun. Its formation is fully described in the chapter on Primary Suffixes. See Nos. 16, 17, 18 (*ante* Vol. lxvii, pp. 202 and ff.) Examples are करुन् *karun*, करुनू *karun*^{a}, and करॅन् ॰ *karạn*^{a}, to make, making (ix. ii. 2, 3).

करुन् *karun*, belongs to the first declension, and the other two to the second. All are masculine. They are declined as follows.

Singular.	Nom.	करुन् *karun*.	करुनू *karun*^{a} or करॅनू *karạn*^{a}.
	Acc.	करनस् *karanas*.	Not used.
	Ag.	करनन् *karanan*.	कर्‌नि *kar*^{9}*n*^{i}.
	Obl.	करन *karan*^{o}.	करनि *karani*.
Plural.	Nom.	करन् *karan*.	कर्‌नि *kar*^{9}*n*^{i}.
	Acc.	करनन् *karanan*.	Not used.
	Ag.	करनो *karanau*.	Not used.
	Obl.	करनो *karanau*.	Not used.

The various cases are used as gerunds. Thus, Dat. करनस् कित् *karanas kyut*^{a}, for making. The oblique form in ऑनि *ani*, is specially used to indicate intention (ix. i. 18). Thus, परनि गछान् छुय् *parani gatshān chuh*, he is going to read; रननि गोव् *ranani gauv*, he went to cook; ख्यनि गछि *khěni gatshi*, he will go to eat.

Roots ending in vowels form the Infinitive only in ऑनू ॰ *ạn*^{a} (ix. i. 21, 24). Thus, from खि *khi*, eat, ख्यॅनू *khyạn*^{a}; from चि *ci*, drink, चॅनू *cyạn*^{a}. This applies only to the nominative singular. Thus, Acc. Sing., ख्यनस् *khyanas*. As usual, नि *ni*, take; दि *di*, give: and यि *yi*,

come, are exceptions. Their Infinitives are निनॖ (न्युनॖ) *nyun*^{u}, Acc. Sing., निनस् *ninas*, or निनिस् *ninis*, and so on for the other two.

The following verbs have feminine infinitives. They never use the ordinary masculine forms (ix. ii. 24, 25).

च़र *tsar*, be inwardly wrathful.	Infinitive	च़रिञ् *tsariñ*, to be so.
च़ुव *tsuv*, quarrel.	,,	च़ुविञ् *tsuviñ*, to quarrel.
मोरव *mōrav*, bear pain,	,,	मोरवॖञ् *morav*^{u}*ñ*, to bear pain.
मर्च *marts*, be impatient.	,,	मर्च़ॖञ् *marts*^{u}*ñ*, to be impatient.

The verbs ख़स *kh*^{a}*s*, pluck the hair; फिच़ *phits*, forget; फ़श *phŏç*, be inwardly angry; फुह *phuh*, be inwardly angry; वज़व *wazav*, moisten; and वुच़ *wuts*, be burned, may either have a masculine infinitive in उन् *un*, etc., or a feminine one in ऊञ् ^{u}*ñ* (ix. ii. 25, 26). Thus, ख़सुन् *k*^{a}*sun* or ख़सॖञ् *k*^{a}*s*^{u}*ñ*, to pluck the hair (*sensu obscœno*). A great many other verbs also optionally form abstract nouns of the feminine gender. These are all described under the head of primary suffixes.

Nouns of Agency. There are three forms of these. The first is made by adding अवुनॖ *awun*^{u}, to the root. Thus, करवुनॖ *karawun*^{u}, a doer (ix. i. 25–27). If the root ends in इ *i*, अव *aw* is inserted, and the इ *i* is changed to य *y*. Thus, खि *khi*, eat, ख्यववुनॖ *khyawawun*^{u}, a doer. Exceptions, as usual, are नि *ni*, take; दि *di*, give; and यि *yi*, come. These form their nouns of agency as follows, निववुनॖ *niwawun*^{u}, a taker, and so on for the other two. The feminine of करवुनॖ *karawun*^{u} is करवॖञ् *karavạñ*, and the noun is thus declined. See article on Primary Suffixes, No. 4, (Vol. lxvii, p. 195).

		Masculine.	Feminine.
Singular.	Nom.	करवुनॖ *karawun*^{u}.	करवॖञ् *karawạñ*.
	Acc.	करवनिस् *karawanis*.	करवञ *karawañĕ*.
	Ag.	करव्नि *karaw*^{ə}*n*^{i}.	करवञि् *karawañi*.
Plural.	Nom.	करव्नि *karaw*^{ə}*n*^{i}.	करवञ *karawañĕ*.
	Acc.	करवन्यन् *karawanyan*.	करवञन् *karawañan*.
	Ag.	करवन्यौ *karawanyau*.	करवञौ *karawañau*.

The second form of the Noun of Agency is made by adding ꣘꣇꣘ꣀ꣇꣘ꣀ꣇ *anwōl*ᵘ, to the root (ix. i. 28–31). Thus, ꣀ꣘꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwōl*ᵘ, a doer. An example of a verb ending in a vowel is ꣈꣘꣇꣘ꣀ꣇꣘ꣀ꣇ *khyanawōl*ᵘ, in which ꣘ *a* is inserted before ꣘꣇꣘ꣀ꣇ *wōl*ᵘ. As an example of ꣇꣘ *ni*, ꣆꣘ *di*, and ꣇꣘ *yi*, we may give ꣇꣘꣇꣘꣘꣇꣘ꣀ꣇꣘ꣀ꣇ *ninawōl*ᵘ. Sometimes ꣘꣇꣘ꣀ꣇꣘ꣀ꣇ *wōl*ᵘ can be added to a feminine abstract noun, thus, ꣓ꣀ꣘꣇꣘ꣀ꣇꣘ꣀ꣇ *zāñwōl*ᵘ, a knower. Regarding these see the article on Primary Suffixes, Nos. 5 and 6, (Vol. lxvii, p. 196).

The feminine of ꣀ꣘꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwōl*ᵘ is ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇ *karanwājĕñ*, and the noun is thus declined.

		Masculine.	Feminine.
Singular.	Nom.	ꣀ꣘꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwōl*ᵘ.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇ *karanwājĕñ*.
	Acc.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwālis*.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ *karanwājĕñĕ*.
	Ag.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwālⁱ*.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karanājĕñi*.
Plural.	Nom.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwālⁱ*.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ *karanwājĕñĕ*.
	Acc.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇꣘ *karanwālyan*.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwājĕñan*.
	Ag.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwālyau*.	ꣀ꣘꣇꣘꣘꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karanwājĕñau*.

The third form of the Noun of Agency is made by adding ꣘꣇꣘ꣀ꣇꣘ꣀ꣇꣘ *angrākh* to the root (ix. i. 28–31). Thus, ꣀ꣘꣇꣘ꣀ꣇꣘ꣀ꣇꣘ *karangrākh*, a doer. The feminine is ꣀ꣘꣇꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karangrākañ* (vi. 28). It is declined regularly. Thus, Acc. Sing., masc. ꣀ꣘꣇꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇ *karangrākas*, fem., ꣀ꣘꣇꣘ꣀ꣇꣘ꣀ꣇꣘ꣀ꣇꣘ *karangrākañĕ*. Verbs ending in vowels have the same irregularities as in the second form. Thus, ꣈꣘꣇꣘ꣀ꣇꣘ꣀ꣇꣘ *khyanagrākh*, an eater, ꣇꣘꣇꣘ꣀ꣇꣘ꣀ꣇꣘ *ninagrākh*, a taker.

Verbal Adjectives, or Participles.

These are Present, Future, or Past. The Past Participles are either Verbal or Adjectival. Verbal Past Participles are the original Past Participles of the verb, but are not now used as participles. Nowadays they are only used as bases for the formation of Past tenses. Adjectival Past Participles are modern formations from the Verbal Past Participles, and are nowadays the only forms used as participles proper. Verbal Past Participles have three forms, *viz.*, the Past, the Aorist, and the Pluperfect.

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The Present Participle. This Participle is an active one. It has been fully described under the head of Primary Suffixes, (No. 1; Vol. lxvii, p. 193). The following *resumé* is given for the sake of convenience. It is formed by adding

आन् *ān* to the root (viii. i. 19; ix. i. 2). Thus, कर *kar*, make, Pres. Part. करान् *karān*. It does not change for gender or number.

The roots नि *ni*, take, दि *di*, give, and यि *yi*, come, take वान् *wān*, thus निवान् *niwān*, दिवान् *diwān*, यिवान् *yiwān*. Other roots ending in इ *i* change the इ *i* to य *ya*, and add वान् *wān*. Thus, खि *khi*, eat, Pres. Part. ख्यवान् *khyawān*, चि *ci*, drink, च्यवान् *cyawān* (viii. i. 19, 20; ix. i. 3).

When a Present Participle is repeated, it means that the thing is done frequently (ix. i. 4). Thus दिवान् दिवान् गौव् *diwān diwān gauv*, he kept giving as he went.

The Future Participle. This is a passive Participle, equivalent to the Latin Future Participle in *-endus*, or the Sanskrit Participle in अनीयः *anīyaḥ*. It is the same in form as the Infinitive in उन् *un*, उनॖ *un*ᵘ or अ॑नॖ *ạn*ᵘ. Thus, इह् पाठ् छुह् परुन् *yih pāṭh chuh parun*, this lesson is to be read, *ayaṁ pāṭhaḥ paṭhanīyaḥ*. इह् पूथि छ्यह् पर॑ञ् *yih pūth*ⁱ *chĕh parạñ*, this book is to be read, *iyaṁ pustikā paṭhanīyā*. In the case of Intransitive Verbs, the participle takes an impersonal passive signification. Thus, च़लुन् *tsalun*, it is to be fled, *calanīyam*, तस् छुह् च़लुन् *tas chuh tsalun*, it is to be fled by him, he must flee. Note that the Agent is always put in the Accusative (which is an old Dative), and not in the Agent case, as we might expect. For further particulars regarding the use of this Future Participle, see the article on Primary Suffixes, Nos. 16–18, (Vol. lxvii, pp. 204 and ff.)

The Future Impersonal Participle. Another impersonal Future Participle Passive is formed by adding अनी *anī* to the root (ix. i. 50). It is formed with both Transitive and Intransitive verbs. Thus तस् करनी *tas karanī*, it is to be done by him, he must do; तस् पकनी *tas pakanī*, he must go. See Primary Suffix No. 14 (Vol. lxvii, p. 201).

The Verbal Past Participle. These will be fully dealt with when describing the past tenses. Suffice it at present to say that the Past Verbal Past Participle only occurs in the first and second conjugations, and is formed by adding उ *u-mātrā* to the root. Thus, first conjugation, क॑रु *kạr*ᵘ, done; second conjugation, च़॑लॖ *tsạl*ᵘ, gone. In the case of verbs of the first conjugation, it is a Passive Participle, and

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in the case of verbs of the second conjugation, which are all intransitive, it is a Neuter Participle. See also article on Primary Suffixes, (No. 10; Vol. lxvii, p. 197). This Past Participle refers to something which has lately happened.

Aorist Verbal Past Participle. This will also be fully dealt with when describing the Aorist Tense. It is formed by adding योव् *yōv* or यौव् *yauv*, to the root. Thus, कर्योव् *karyōv* or कर्यौव् *karyauv*, done. The Participle occurs for all conjugations, with this difference, that in the first and second conjugations it is an Aorist or Indefinite Past, and contains no idea of proximity or remoteness of time. In the case of verbs of the third conjugation, which have no Verbal Past Participle, it is used instead of that Participle, and refers to something which has lately happened. See, also, Primary Suffix, No. 11, (Vol. lxvii, p. 198).

Pluperfect Verbal Past Participle. This will also be fully dealt with when describing the Pluperfect tense. It is formed by adding याव् *yāv* to the root. Thus, कर्याव् *karyāv*, done. In the case of verbs of the first and second conjugations it implies that the action has taken place a long time ago. In the case of verbs of the third conjugation it takes the place of the Aorist Participle, the proper form of which has been used up for the Past. These verbs have a special form for the true Pluperfect Participle, which need not be described here.

The Adjectival Past Participle. These are formed by adding the termination म॑तु *mạt*ᵘ or मुतु *mut*ᵘ, to a verbal Past Participle. In the case of verbs of the first and second conjugations, this is added to the Past Participle in उ *u-mātrā*, and in the case of verbs of the third conjugation to the Aorist Participle in योव् *yōv* or यौव् *yauv*, the final व् *v* of which is elided. Both members of the compound thus formed are liable to changes of inflexion and gender (ix. i. 40). See also article on Primary Suffixes, (No. 12; Vol. lxvii, p. 198). Examples are,—

First Conjugation.

क॑रु॒म॑तु *kạr*ᵘ*mạt*ᵘ, or क॑रु॒मुतु *kạr*ᵘ*mut*ᵘ, made; which is thus declined.

Singular.

	Masc.	Fem.
Nom.	क॑रु॒म॑तु *kạr*ᵘ*mạt*ᵘ or क॑रु॒मुतु *kạr*ᵘ*mut*ᵘ.	क॑रु॒म॑च्रू *kạr*ᵘ*mạts*ᵘ.
Acc.	क॑रि॒मतिस् *kạr*ⁱ*matis*.	कर्यमच्य् *karĕmatsĕ*.
Ag.	क॑रि॒म॑ति *kạr*ⁱ*mạt*ⁱ.	करिमचि *karimatsi*.

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PLURAL.

	Masc.	Fem.
Nom.	क॒रिम॒॑ति *kạrⁱmạtⁱ.*	कर्यमच़ *karĕmat̲s̲ᵃ.*
Acc.	क॒॑रिमत्यन् *kạrⁱmatyan.*	कर्यमच़न् *karĕmat̲s̲an.*
Ag.	क॒॑रिमत्यौ *kạrⁱmatyau.*	कर्यमच़ौ *karĕmat̲s̲au.*

SECOND CONJUGATION.

ब॒॑वुम॑तु *bọ̆vᵘmạtᵘ*, or ब॒॑वुमु॒तु *bọ̆vᵘmutᵘ*, become.

Singular.	Masc.	ब॒॑बु॒म॑तु *bọ̆vᵘmạtᵘ.*
	Fem.	ब॒॑बु॒म॑च़ु *bọ̆vᵘmạt̲s̲ᵘ.*
Plural.	Masc.	ब॒॑बि॒म॒॑ति *bọ̆vⁱmạtⁱ.*
	Fem	ब॒॒व्यमच़ *bŏvĕmat̲s̲ᵃ.*

THIRD CONJUGATION.

व्यद्योम॑तु *vyaṭhyōmạtᵘ*, व्यद्यौम॑तु *vyaṭhyaumạtᵘ*, व्यद्योमुतु *vyaṭhyōmutᵘ*, or व्यद्यौमुतु *vyaṭhyaumutᵘ*, become fat, from व्यठ *vyaṭh*, be fat. It is thus declined,—

SINGULAR.

	Masc.	Fem.
Nom.	व्यद्योम॑तु *vyaṭhyōmạtᵘ*, &c.	व्यद्येम॑च़ु *vyaṭhyēmạt̲s̲ᵘ.*
Acc.	व्यद्येमतिस् *vyaṭhyēmatis.*	व्यद्येमच़्य *vyaṭhyēmat̲s̲ē.*
Ag.	व्यद्येम॒॑ति *vyaṭhyēmạtⁱ.*	व्यद्येमच़ि *vyaṭhyēmat̲s̲i.*

PLURAL.

Nom.	व्यद्येम॒॑ति *vvyaṭhyēmạtⁱ.*	व्यद्येमच़ *vyaṭhyēmat̲s̲ᵃ.*
Acc.	व्यद्येमत्यन् *vyaṭhyēmatyan.*	व्यद्येमच़न् *vyaṭhyēmat̲s̲an.*
Ag.	व्यद्येमत्यौ *vyaṭhyēmatyau.*	व्यद्येमच़ौ *vyaṭhyēmat̲s̲au.*

Verbal Adverbs, or Conjunctive Participles.

There are two of these, a Present and a Past.

The PRESENT CONJUNCTIVE PARTICIPLE. This is formed from the Present Participle by adding इ *i-mātrā*, and modifying the preceding long आ *ā*. Thus, from कर *kar*, make, Present Participle, करान् *karān*,

Present Conjunctive Participle, करानि *karāṇ*[1], on making, at the time of making. It is used in sentences like the following सुह् करानि गौव् *suh karāṇ*[1] *gauv*, he went away as he was doing it. This form is not mentioned by Īçvara-kaula, and, according to my paṇḍit, is only used by rustics. It is more elegant to use the simple Present Participle. Thus, सुह् करान् गौव् *suh karān gauv*.

The Past Conjunctive Participle. This form corresponds to the Sanskrit Conjunctive Participle in त्वा *tvā*, or य *ya* (त्य *tya*), and means 'having done so and so.' It is fully described in the Article on Primary Suffixes, (No. 2; Vol. lxvii, p. 193), and the more important information there given is here repeated for the sake of convenience. It is formed by adding इथ् *ith* or इथ् क्यथ् *ith kyăth*, to the root. Thus, करिथ् *karith*, having made, परिथ् *parith*, having read. So also करिथ् क्यथ् *karith kyăth*, having made, and परिथ् क्यथ् *parith kyăth*, having read (ix. i. 5, 6).

Before this suffix a radical आ *ā* is modified, a radical ए *e* becomes ई *ī*, and a radical ओ *o* becomes ऊ *ū* (ix. i. 13–15). Thus,—

From—

कार *kār*, boil.	कारिथ् *kāṛith*, having boiled.
मार *mār*, beat.	मारिथ् *māṛith*, having beaten.
तार *tār*, pass over.	तारिथ् *tāṛith* having passed over.
त्सेट *tsēṭ*, pound to powder.	त्सीटिथ् *tsīṭith*, having pounded to powder.
लेख *lēkh*, write.	लीखिथ् *līkhith*, having written.

[So also—

ब्यह *byah*, sit.	बिहिथ् *bihith*, having sat].
खोत्स *khōtṣ*, fear.	खूत्सिथ् *khutṣith*, having feared.
बोज़ *bōz*, hear.	बूज़िथ् *būzith*, having heard.
तोल *tōl*, weigh.	तूलिथ् *tūlith*, having weighed.

Roots ending in vowels, form their Conjunctive Participle as follows (ix. i. 7, 8).

खि *khi*, eat.	क्यथ् *khyăth*, having eaten.
चि *ci*, drink.	च्यथ् *cyăth*, having drunk.

छि *hi*, take.	छ्यथ् *hyăth*, having taken.
ज़ि *zi*, be born.	ज़्यथ् *zyăth*, having been born.
पि *pi*, fall.	प्यथ् *pyăth*, having fallen.

But—

दि *di*, give.	दिथ् *dith*, having given.
नि *ni*, take.	निथ् *nith*, having taken.
यि *yi*, come.	यिथ् *yith*, having come.

So also, ख्यथ् क्यथ् *khyăth kyăth*, &c.

The following are irregular,—

वुड *wuḍ*, fly, when it means to obtain salvation (*mōkṣa*) makes वुजिथ् *wujith*. Thus, वुजिथ् गोव् *wujith gauv*, having obtained salvation, he went, *i.e.*, he went to heaven, but वुडिथ् गोव् *wuḍith gauv*, having flown, he went, *i.e.*, he flew away (ix. i. 9).

The causal verb मंद्राव *maṣ°rāw*, cause to forget, makes मासविथ् *māṣawith*, when the object forgotten is death. Thus, मरुन् मासविथ् *marun māṣawith*, having caused to forget death. If anything else is forgotten, it is मंद्रावित्थ् *maṣ°rāwith*, regularly (ix. i. 10).

When the Conjunctive Participle is repeated, to imply continuous action, the थ् *th* is dropped, and the final *i* becomes *i-mātrā* (ix. i. 11, 12). Thus,—

कॅरि कॅरि *kạr*^{i} *kạr*^{i}, having made, having made, *i.e.*, having kept making.

बूज़ि बूज़ि *būz*^{i}, *būz*^{i}, having kept hearing.

कांरि कांरि *kā̆r*^{i} *kā̆r*^{i}, having kept boiling.

तांरि तांरि *tār*^{i} *tār*^{i}, having continued passing people over.

Verbs ending in vowels optionally retain the थ् *th*. Thus, ख्य ख्य *khĕ khĕ*, or ख्यथ् ख्यथ् *khyăth khyăth*, having kept eating. दि दि *di di*, or दिथ् दिथ् *dith dith*, having kept giving.

Negative Conjunctive Participle. This is formed by adding अनय् *anay* to the root (ix. i. 51). Thus, करनय् *karanay*, not having done. See Primary Suffix, No. 14, (Vol. lxvii, p. 201).

A. Indicative Mood.

1. Present Tense.

The same form is used both for the Definite, the Habitual, and the Indefinite Present (viii. i. 7–10). Thus, परान् छुह् *parān chuh*, he is reading, or he is in the habit of reading, or he reads. So we have,—

ईश्वर् ज़गतस् रछान् छुह् *Içwar zagatas rachān chuh*, God protects the world.

पान पानस् रछान् छुह् *pānᵃ pānas rachān chuh*, by himself (*i.e.*, by his own power) he protects himself. *Ātmanā atmānaṁ pālayati.*

व्याकरण् परान् छुह् ल्वकुट् *vyākaraṇ parān chuh lōkuṭᵘ*, the boy is reading (*i.e.*, has arrived at that stage of his studies) grammar.

गङ्गाय गछान् छुह् प्रथ् कुंबस् *gaṇgāyᵃ gaṯshān chuh prăth kumbas.* He visits (is in the habit of visiting) the Ganges at every *kumbha* festival.

क्याह् छुह् मुर्त्स् करान् *kyāh chuh murṯs karān*, does he make images? (is that his profession?)

क्याह् छुह् जान् लेखान् *kyāh chuh jān lēkhān*, is the holy man writing (and going on writing)?

क्याह् छुह् र्त्ʊ ग्यवान् *kyāh chuh rᵊtᵘ gyawān*, is the good man singing?

This tense is found by adding the Present Tense of the auxiliary verb to the Present Participle of the principal verb, which does not change for gender or number. It is therefore thus conjugated.

I make, or *am making.*

	Singular.		Plural.	
Person.	Masculine.	Feminine.	Masculine.	Feminine.
1	करान् छुस् *karān chus.*	करान् छस् *karān chĕs.*	करान् छिह् *karān chih.*	करान् छेह् *karān chĕh.*
2	करान् छुख् *karān chukh.*	करान् छेख् *karān chĕkh.*	करान् छिव *karān chiwᵃ.*	करान् छेव *karān chĕwᵃ.*
3	करान् छुह् *karān chuh.*	करान् छेह् *karān chĕh.*	करान् छिह् *karān chih.*	करान् छेह् *karān chĕh.*

Negative form, करान् छुस्न *karān chusn*ª, I do not make, &c., see p. 11.

Interrogative form, करान् छुसा *karān chusā*, करान् छुस *karān chus*ª, &c., do I make? see p. 12.

Negative Interrogative form, करान् छुस्ना *karān chusnā*, &c., do I not make? see p. 14.

Emphatic form, करान् छुस्ति *karān chusti*, &c., I do indeed make, see p. 14.

Emphatic Interrogative form, करान् छुस्त्या *karān chustyā*, &c., do I indeed make? see p. 14.

In this, and in other periphrastic tenses, it is elegant to put the auxiliary before the verb (viii. i. 22, 23, 24) when standing in a sentence. Thus,—

बत छुह् सुह् ख्यवान् *batª chuh suh khyawān*, he is eating rice, is more elegant than बत सुह् ख्यवान् छुह् *batª suh khyawān chuh*, though both are correct.

तव पत छुह् आसनस् प्यठ् बिठिथ् पूज़ा करान् *tawª patª chuh āsanas pyăṭh bihith pūzā karān*, after that; he is doing worship having sat down on a seat, is more elegant than तव पत आसनस् प्यठ् बिठिथ् पूज़ा करान् छुह् *tawª patª āsanas pyăṭh bihith pūzā karān chuh*, though both are correct.

So the following is the most elegant order,—ईश्वर् छुह् आसान् काशिय अंदर् *īçwar chuh āsān kāçiyª andar*, God exists in Benares. When, however, the verb stands by itself as in the paradigm, the auxiliary always follows.

The following are examples of the use of pronominal suffixes, (pp. 15 and ff)—

बुह् छुसथ् करान् *bŏh chus-ath karān*, I make thee (viii. i. 37).

ऑसि छिथ् करान् *ạsⁱ chi-th karān*, we make thee.

बुह् छुसन् करान् *bŏh chus-an karān*, I make him.

बुह् छुसस् करान् *bŏh chus-as karān*, I make for him.

बुह् छुसव करान् *bŏh chus-awª karān*, I make you.

बुह् छुसख् करान् *bŏh chus-akh karān*, I make them.

Similarly for the other persons, which are all regular, except सुह् छुस् करान् *suh chu-s karān*, he makes him, or for him (not छुन् *chu-n*) (see p. 19).

2. Imperfect Tense.

This tense is not described by *Īçvara-kaula.* It is formed exactly like the Present, except that the Past tense of the Auxiliary Verb is used instead of the Present. Thus,—

I was making.

	Singular.		Plural.	
Person.	Masculine.	Feminine.	Masculine.	Feminine.
1	करान् ओसुस् *karān ōsus.*	करान् आ॑सूस् *karān ạ̄s^{ū}s.*	करान् आ॑सि *karān ạ̄s^{i}.*	करान् आस *karān ās^{a}.*
2	करान् ओसुख् *karān ōsukh.*	करान् आ॑सूख् *karān ạ̄s^{ū}kh.*	करान् आ॑सिव *karān ạ̄s^{i}w^{a}.*	करान् आसव *karān ās^{a}w^{a}.*
3	करान् ओसु *karān ōs^{u}.*	करान् आ॑सू *karān ạ̄s^{ū}.*	करान् आ॑सि *karān ạ̄s^{i}.*	करान् आस *karān ās^{a}.*

The various adverbial suffixes are added as in the case of the Present Tense. They will be found in detail under the paradigm of the auxiliary verb, and need not be repeated here. One example will suffice. करान् ओसुस्न *karān ōsusn^{a}*, I was not making. As in the case of the Present, in a formal sentence, it is more elegant to place the auxiliary before the present participle. Thus, बत ओसु सुह् ख्यवान् *bat^{a} ōs^{u} suh khyawān*, he was eating rice.

Pronominal suffixes are added as in the Present. Thus,—

बुह् ओसुसथ् करान् *bŏh ōsus-ath karān*, I was making thee.

अ॑सि आ॑सिथ् करान् *ạs^{i} ạ̄si-th karān*, we were making thee.

बुह् ओसुसय् करान् *bŏh ōsus-ay karān*, I was making for thee.

बुह् ओसुसन् करान् *bŏh ōsus-an karān*, I was making him.

बुह् ओसुसस् करान् *bŏh ōsus-as karān*, I was making for him.

बुह् ओसुसव करान् *bŏh ōsus-aw^{a} karān*, I was making you.

बुह् ओसुसख् करान् *bŏh ōsusakh karān*, I was making them.

सुह् ओसुस् करान् *suh ōsu-s karān*, he was making him or for him.

(not ओसुन् *ōsu-n*).

And so others.

3. Future Tense.

This tense is conjugated as follows (viii. ii. 28).

Singular.	Plural.
1 कर *kar*°, I shall make.	करव् *karav*, we shall make.
2 करख् *karakh*, thou wilt make.	करिव् *kariv*, you will make.
3 करि *kari*, he will make.	करन् *karan*, they will make.

Roots ending in vowels insert म् *m* in the first person of both numbers. Before इ *i*, they insert य् *y*. As usual, all roots ending in इ *i*, except नि *ni*, take, दि *di*, give, and यि *yi*, come, change the final इ *i* of the root to य *ya* (29). We thus get for the future of खि *khi*, eat,—

Singular.	Plural.
1 ख्यम *khyam*°.	ख्यमव् *khyamav*.
2 ख्यख् *khyakh*.	ख्यिव् *khĕyiv*.
3 ख्यि *khĕyi*.	ख्यन् *khyan*.

From दि *di*, give, we have,—

Singular.	Plural.
1 दिम *dim*°.	दिमव् *dimav*.
2 दिख् *dikh*.	दियिव् *diyiv*.
3 दियि *diyi*.	दिन् *din*.

This tense has a special interrogative form, which is thus conjugated (30, 31).

Singular.	Plural.
1 करा *karā*, shall I do or make.	करव *karaw*°.
2 करख *karakh*°.	करिव *kariw*°.
3 कर्यो *karyā*.	करन *karan*°.

Pronominal suffixes are added to this tense as usual, except that the third person singular is slightly irregular, being कर्यम् *karyam* (he will make me), &c., not करिम् *karim*, &c. (viii. ii. 29). So कर्यस् *karyas*, not करिस् *karis*, and all other suffixes added to this person of this tense. When, however, the suffixes of the second person is added there is no irregularity. Thus, करिय् *kariy*, not कर्यय् *karyay*. Remember that final

ख् *kh* becomes ह् *h* before a suffix. We thus get the following forms which will do as samples.

Added to first person,—

करस् *kara-s*, I shall make for him.

करन् *kara-n*, I shall make him.

करोस् *karō-s*, we shall make for him.

करोन् *karō-n*, we shall make him.

Added to second person,—

करहस् *karah-as*, thou wilt make for him.

करहन् *karah-an*, thou wilt make him.

कर्यूस् *karyū-s*, you will make for him.

Added to third person,—

कर्यम् *kary-am*, he will make me.

करिय् *kari-y*, he will make thee or for thee. (It should be remembered that the suffix अथ् *ath* is not used with the third person).

करिव *kari-w*ª, he will make you or for you.

कर्यस् *kary-as*, he will make him, or for him. (अन् *an* is not used with the third person).

कर्यख् *kary-akh*, he will make them or for them.

करनस् *karan-as*, they will make him or for him.

करनख् *karan-akh*, they will make them or for them.

Interrogative forms would be such as करस *kara-s-*ª, shall I make for him ?

The feminine impersonal verbs त्सर *tsar*, to be inwardly wrathful, &c. (see pp. 16 and 22), are thus conjugated, this tense making no distinction between masculine and feminine.

त्सर्यम् *tsary-am*, there will be inward anger to me. I shall be inwardly angry.

असे त्सरि *asē tsari*, we shall be inwardly angry.

त्सरिय् *tsari-y*, thou wilt be inwardly angry.

त्सरिव *tsari-w*ª, you will be inwardly angry.

च़र्यस् *ts̲ary-as*, he will be inwardly angry.

च़र्यख् *ts̲ary-akh*, they will be inwardly angry.

On the Past Tenses Generally.

Kāçmīrī has three Simple (as distinct from Periphrastic) Past Tenses,—the Past, the Aorist, and the Pluperfect.

There are three conjugations of verbs in these tenses. The first conjugation includes all active and impersonal verbs.

The second conjugation includes the following neuter (viii. iii. 77–97) verbs,—

1. थक *thak*, be weary.
2. पक *pak*, go.
3. समख *samakh*, become visible, be seen, meet a person.
4. ह्वख *hŏkh*, become dry.
5. तग *tag*, be possible, be known how to be done.
6. लग *lag*, be with, suffer pain, fit.
7. च़ंग *çŏŋg*, lie down, go to sleep.
8. क्वच़ *k°ts̲*, be wet.
9. खोच़ *khots̲*, fear.
10. पच़ *pats̲*, trust with a loan.
11. रोच़ *rōts̲*, be preferred.
12. व्यच़ *vyats̲*, pervade, fit into.
13. ह्वच़ *hŏts̲*, go bad, decay.
14. गच़ *gats̲h*, be proper (गच़ *gats̲h*, go, belongs to the third conjugation).
15. व्यपज़ *wŏpaz*, be born.
16. दज़ *daz*, be burnt.
17. रोज़ *rōz*, stop, stand.
18. फट *phaṭ*, split (of wood), sprout (of a plant), sink into water.
19. फुट *phuṭ*, be broken.
20. रोट *rōṭ*, be stopped (also third conjugation).
21. बुड *bŏḍ*, dive, sink.
22. वात *wāt*, arrive.
23. व्यथ *wŏth*, stand up.
24. च़्हयन्न *ts̲hyann*, be bored, be torn, be split.
25. सपन *sapan*, सपज़ *sapaz*, or सपद् *sapad*, be complete.
26. वुप *wup*, burn inside (see below).
27. च्रप *çrap*, evaporate, be digested be soaked up (see below).
28. प्रय *pray*, be pleased.
29. लय *lay*, be worth.
30. वय *way*, be fit to eat, agree with, suit.
31. खर *khar*, be disliked.
32. तर *tar*, be crossed.
33. फर *phar*, be stolen, be a cause of loss to.
34. फेर *phēr*, go round, rot, regret, be inverted.
35. मर *mar* die, (मर् *mar*, unite,

belongs optionally (viii. iii. 91) to the first conjugation).

36. सोर *sōr*, be spent, exhausted (of things).
37. गल *gal*, melt.
38. त्सल *tsal*, flee, escape.
39. ड्ल *ḍal*, pass over.
40 ड्ोल *ḍōl*, be unused.
41. फल *phal*, bear fruit, become old (of clothes), be divided.
42. फल्ल *phŏll*, expand (of a flower).
43. मेल *mēl*, meet, be met by a person.
44. ब्व *bŏv*, be born, grow.
45. राव *rāv*, be lost.
46. द्व *dŏṣ*, trickle.
47. पोष *pōṣ*, be competent, victorious.
48. मष *maṣ*, forget.
49. रोष *rōṣ*, be angry.
50. आस *ās*, be.
51. खस *khas*, mount, ascent.
52. फस *phas*, be entangled, caught.
53. बस *bas*, dwell.
54. लस *las*, live long, live in good health.
55. लोस *lōs*, be weary.
56. वस *was*, come down, descend.
57. ब्यह *byah*, sit.

Of the above, the verb रोट *rōṭ*, be stopped, may optionally be conjugated in the third conjugation (viii. iii. 84). Thus,—

2nd Conjugation.	Past Participle,		रूट् *rūṭ**
	Aorist	,,	रोच्योव् *rōcyōv*.
	Pluperfect	,,	रोच्याव् *rōcyāv*.
3rd Conjugation.	Aorist	,, in sense of Past	रोट्योव् *rōṭyōv*.
	Pluperfect	,, ,,	Aorist रोट्याव् *rōṭyāv*.
	True Pluperfect	,,	रोटियाव् *rōṭiyāv*.

The verbs वुप *wup*, burn inside, and श्रप *çrap*, be digested, optionally form their Pluperfect after the manner of the third conjugation (viii. iii. 89). Thus,—

2nd Conjugation.	Pluperfect Participle	वुप्याव् *wupyāv*, श्रप्याव् *çrapyāv*.
3rd Conjugation.	True Pluperfect Participle	वुपियाव् *wupiyāv*, श्रपियाव् *çrapiyāv*.

The above 57 verbs are those given by Içvara-kaula in the *Bhūta-pāda* of the *Ākhyāta-prakriyā* of his Grammar (viii. iii. 77–97), but the following are added to the second conjugation by my Paṇḍit.

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58. पलज़ *palaz*, be useful.
59. पलट *palat*, melt, deliquesce.
60. पुन *pun*, come true (of a curse).
61. प्रार *prār*, wait.
62. फोर *phōr*, quiver.
63. नश *naç*, disappear.
64. तोष *tōṣ*, be satisfied.
65. बास *bāṣ*, become clear, evident.
66. व्वबस *wŏbas*, increase.

The third conjugation includes all other neuter verbs, except those used impersonally.

I shall now describe each of the Past tenses separately.

4 (*a*). The Verbal Past Participle.

This Participle, from which, as will be seen, the Past Tense is derived, is formed by adding उ् *u-mātrā* to the root. Thus, कर *kar*, do; Past Participle क॑रु् *kạr*^{u}. Its feminine singular is formed by changing *u-mātrā* to *ū-mātrā*. Thus, क॑रू् *kạr*^{ū}. The masculine plural by changing the *u-mātrā* to *i-mātrā*. Thus, क॑रि *kar*^{i}, and the feminine plural by changing the *ū-mātrā* to य *y*^{a} (*ĕ*), thus, कर्य *karĕ*. Before the *mātrā*-vowels, the root-vowel of the verb is liable to modifications. But (this is important) before the य *y*^{a} (*ĕ*) of the feminine plural, there is no modification. The modifications caused by *mātrā*-vowels are as follows,—

If the root-vowel is *a*, before *u-mātrā*, it becomes *ạ* (*o*). Thus, कर *kar*, make, क॑रु् *kạr*^{u}, pronounced *kor*, he (was) made (viii. iii. 19).

If the root-vowel is *a*, before *ū-mātrā*, it becomes *ạ* (*ü*). Thus, क॑रू् *kạr*^{ū}, pronounced *kür*, she (was) made (viii. iii. 19).

If the root-vowel is *a*, before *i-mātrā*, it becomes *ạ* (*a*^{i}). Thus, क॑रि *kạr*^{i}, pronounced *ka*^{i}*r*^{i}, they (masc.) (were) made (viii. iii. 19).

If the root-vowel is *ā*, before *ū-mātrā*, it becomes *ō*. Thus, मार *mār*, kill, मोरु् *mōr*^{u}, he (was) killed (viii. iii. 20).

If the root-vowel is *ā*, before *ū-mātrā*, it becomes *ạ̄* (*ö*). Thus, मा॑रू् *mạ̄r*^{ū}, pronounced *mör*, she (was) killed (viii. iii. 19).

If the root-vowel is *ā*, before *i-mātra* it becomes *ạ̄* (*ö*^{i}). Thus, मा॑रि *mạr*^{i}, pronounced *mö*^{i}*r*^{i}, they (masc.) (were) killed (viii. iii. 19).

If the root-vowel is *i*, before *u-mātrā* it becomes *yu*. Thus, लिव *liv*, plaster, ल्युवु् *lyuv*^{u}, he (was) plastered.

If the root-vowel is *i*, before *ū-mātrā* it becomes *i* (pronounced *yü*). Thus, लिवू *liv*^{ū}, pronounced *lyüv*, she (was) plastered.

If the root-vowel is *i*, before *i-mātrā*, it is unchanged. Thus, लिवि *livⁱ*, they (masc.) (were) plastered.

If the root-vowel is *ī*, before *u-mātrā*, it becomes *yū*. Thus, चीर *cīr*, squeeze out, च्यूर् *cyūrᵘ*, he (was) squeezed out.

If the root-vowel is *ī*, before *ū-mātrā* it is unchanged. Thus, चीर् *cīrᵘ*, she (was) squeezed out.

If the root-vowel is *ī*, before *i-mātrā* it is unchanged. Thus, चीरि *cīrⁱ*, they (masc.) (were) squeezed out.

If the root-vowel *u* or *ū*, it always remains unchanged. Thus, from बुज़ *buz*, parch, बुज़ू *buzᵘ*, बुज़ू *buzᵘ*, बुज़ि *buzⁱ*. From लूट *lūṭ*, rob, लूट् *lūṭᵘ*, लूट *lūṭᵘ*, लूटि *lūṭⁱ*.

If the root-vowel is *ē*, before *u-mātrā*, it becomes *yū*. Thus, फेर *phēr*, be turned, फ्यूर् *phyūrᵘ*, he (was) turned (viii. iii. 21, 22).

If the root-vowel is *ē*, before *ū-mātrā*, it becomes *ī*. Thus, फीर् *phīrᵘ*, she (was) turned (viii. iii. 23).

If the root-vowel is *ē*, before *i-mātrā*, it becomes *ī*. Thus, फीरि *phīrⁱ*, they (were) turned (viii. iii. 21, 22).

If the root-vowel is *ō*, before *u-mātrā*, it becomes *ū*. Thus, बोज़ *bōz*, hear, बूज़ू *būzᵘ*, he (was) heard (viii. iii. 24).

If the root-vowel is *ō*, before *ū-mātrā*, it becomes *ū*. Thus, बूज़ू *būzᵘ*, she (was) heard (viii. iii. 25).

If the root-vowel is *ō*, before *i-mātrā*, it becomes *ū*. Thus, बूज़ि *būzⁱ*, they (masc.) (were) heard (viii. iii. 24).

Before य *ĕ* or च *a* of the feminine plural, the root-vowel is always unchanged. Thus, करॅ *karĕ*, मारॅ *mārĕ*, लिय *livĕ*, चीरॅ *cīrĕ*, बुज़ *buzᵃ*, फेरॅ *phērĕ*, बोज़ *bōzᵃ*.

When any pronominal suffix except व *wᵃ* is added to a form ending in a *mātrā*-vowel, that *mātrā*-vowel becomes fully pronounced, but the modification of the root-vowel remains unchanged. Thus, कॅर् *kạrᵘ* (pronounced *kor*) + न् *n*, becomes कॅरुन् *kạrun*, pronounced *korun*, and not *karun* or *korn*. So मोर् *mōrᵘ* + न् becomes मोरुन् *mōrun*, and so on. In such a case, *ū-mātrā* is pronounced as a short German *ü*. Thus, कॅर् *kạrᵘ* (pronounced *kür*) + न् *n*, becomes *kạrᵘn*, pronounced *kürün*. If the suffix is

व *w*ª, the *mātrā*-vowel remains unchanged. Thus, कर्+व *kar*ª+*w*ª, he (was) made by you, becomes कर्व *karªw*ª, and is pronounced *korw*ª, and not *koruw*ª. So कर् *kar*ª+व *w*ª made (fem.) by you, becomes कर्व *karª-w*ª, and is pronounced *kürw*ª. Similarly, when a *mātrā*-vowel is followed by any other vocalized syllable, it remains a *mātrā*-vowel. Thus, कर्नस् *karª-n-as*, not कर्णस् *karunas*, (was) made-by-him-I. Even in such cases, Içvara-kaula (as in viii. iii. 3 and 4) writes कर्व *karuw*ª, लीखिव *līkhiw*ª, &c., with the *mātrā*-vowel apparently fully pronounced, but in this he is, according to my Paṇḍit, incorrect, and it is a mere slip of the pen.

When, in the feminine plural, य *y*ª (ĕ) follows one of the letters च् *ts*, छ् *tsh*, ज़् *z*, or ञ् *ñ*, the *y*ª becomes च ª (viii. iii. 47). Thus, दित्स् *dits*+य *y*ª becomes दित्स *dits*ª, they (fem.) (were) given. So हॅत्स् *hĕts*+य *y*ª, becomes हॅत्स *hĕts*ª, they (fem.) (were) taken. So वात्स् *wāts*+य *y*ª becomes वात्स *wāts*ª, they (fem.) arrived, दज़् *daz*+य *y*ª becomes दज़ *daz*ª, they (fem.) were burnt (viii. iii. 7, 12).

So also य् *y* is often elided after स् *s* (viii. iii. 13). Thus, आस् *ās*+य *y*ª, becomes आस *ās*ª, they (fem.) were. बस् *bas*+य *y*ª, बस *bas*ª, they (fem.) dwelt. Içvara-kaula restricts this to verbs of the 2nd conjugation, but, according to my Paṇḍit, य् *y* is also elided after all verbs of the 1st conjugation, except in the case of च्रस *tsas*, laugh loudly (impersonal). Thus, from कस *kas*, fry, feminine plural कस *kas*ª, but, from च्रस *tsas*, च्रस्य *tsasĕ*.

In the case of the following verbs of the 1st conjugation, the य् *y* may, according to my Paṇḍit, be optionally retained. ठास *thās* bury; दस *das*, beat; मुस *mus*, eat improperly; स्ªस *sªs*, break wind. Thus, ठास *thāsª*, or ठास्य *thāsĕ*.

It will be seen that the feminine of this participle ends in *ū-mātrā*, in *y*ª (ĕ), or in ª. Before these terminations, the final consonant of the Past Participle undergoes certain changes. These changes only occur in the first and second conjugations. They are as follows:—

Final क् *k*, ख् *kh*, and ग् *g*, become च् *c*, छ् *ch*, and ज् *j* respectively, before both ऊ् *ū-mātrā* and य *ya* (ĕ) (viii. iii. 7). Thus,—

From Root थक *thak*, be weary ; थ॑कु *thạk*^{u}, he (was) weary ; but थ॑चू *thạc*^{ū}, she (was) weary ; थच्य *thacĕ*, they (fem.) (were) weary.

,, ,, लेख *lekh*, write ; ल्यूखु *lyūkh*^{u}, he (was) written ; but लीछू *līch*^{ū}, she (was) written ; लेछ्य *lechĕ*, they (fem.) (were) written.

,, ,, दग *dag*, pound ; द॑गु *dạg*^{u}, he (was) pounded ; but द॑जू *dạj*^{ū}, she (was) pounded ; दज्य *dajĕ*, they (fem.) (were) pounded.

ट् *ṭ*, ठ् *ṭh*, and ड् *ḍ*, become च् *c*, छ् *ch*, and ज् *j* respectively, before *y*^{a} (*ĕ*), but not before *ū-mātrā* (viii. iii. 70). Thus,—

From Root फट *phaṭ*, be split ; फ॑टु *phaṭ*^{u}, he (was) split ; फ॑टू *phạṭ*^{ū}, she (was) split ; but फच्य *phacĕ*, they (fem.) (were) split.

,, ,, मठ *maṣ*, forget ; म॑ठु *mạṭh*^{u}, he (was) forgotten ; म॑ठू *mạṭh*^{ū}, she (was) forgotten ; but मछ्य *machĕ*, they (fem.) (were) forgotten.

,, ,, गंड *gaṇḍ*, bind ; ग॑ंडु *gaṇḍ*^{u}, he (was) bound ; ग॑ंडू *gaṇḍ*^{ū}, she (was) bound ; but गंज्य *ganjĕ*, they (fem.) (were) bound.

त् *t*, थ् *th*, द् *d*, and न् *n*, become च़् *ts*, छ़् *tsh*, ज़् *z*, and ञ् *ñ* respectively, before both *ū-mātrā*, and before *y*^{a} (*ĕ*), which latter then becomes *a* by the rule given on the last page (viii. iii. 72, 73). Thus,—

From Root कत *kat*, spin ; क॑तु *kạt*^{u}, he (was) spun ; but क॑च़ू *kạts*^{ū}, she (was) spun ; कच़्य *kats*^{a}, they (fem.) (were) spun.

,, ,, व्वथ *wŏth*, arise ; व्व॑थु *wọ̆th*^{u}, he arose ; but व्व॑छ़ू *wọ̆tsh*^{ū}, she arose, and व्वछ़्य *wŏtsh*^{a}, they (fem.) arose.

,, ,, लद *lad*, build ; ल॑दु *lạd*^{u}, he (was) built ; but ल॑ज़ू *lạz*^{ū}, she (was) built, and लज़्य *laz*^{a}, they (fem.) (were) built.

,, ,, रन *ran*, cook ; र॑नु *rạn*^{u}, he (was) cooked ; but र॑ञू *rạñ*^{ū}, she (was) cooked, and रञ्य *rañ*^{a}, they (fem.) (were) cooked.

ल *l* becomes ज *j* before both *ū-matrā* and *y*^{a} (*ĕ*) (viii. iii. 74). Thus,—

From Root च़ल *tsal*, flee ; च़॑लु *tsạl*^{u}, he fled ; but च॑जू *tsạj*^{ū}, she fled, and च़ज्य *tsajĕ*, they (fem.) fled.

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The verbs पिह *pih*, grind; मुह *muh*, deceive; सह *sah*, bear; ग्ह *g*ᵃ*h*, grind; and च़्ह *ts*ᵃ*h*, suck, under similar circumstances change their final ह् *h* to श् *ç* (viii. iii. 75). Thus,—

प्युहु *pyuh*ᵘ, he (was) ground; but पिशू *piç*ᵘ, she (was) ground; and पिश्य *piçĕ*, they (fem.) were ground.

Combining what is said here, together with what has been said above (pp. 40 and ff.) regarding vowel changes, we come to the three following general rules, all of which apply only to the first and second conjugations, and do not apply to the third.

1. *In the Past Participle masculine, both singular and plural, only the root vowel, and not the final consonant, is liable to change.*

2. *In the Past Participle feminine singular, both the root vowel and the final consonant are liable to change.*

3. *In the Past Participle feminine plural, only the final consonant, and not the root vowel, is liable to change.*

These three rules are most important, as the whole scheme of conjugating the Past Tense depends upon them.

Irregular Past Participles.

The following verbs have irregular Past Participles. The irregularities are, of course, carried through the Past tense.

Verb.	PAST PARTICIPLE.			
	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
खस *khas*, mount (viii. iii. 66).	ख॑थु *khạth*ᵘ [or ख॑तु *khạt*ᵘ].	ख॑छू *khạtsh*ᵘ, [or ख॑च़्चू *khạts*ᵘ].	ख॑थि *khạth*ⁱ [or ख॑ति *khạt*ⁱ].	खछ *khatsh*ᵃ [or खच़्च *khats*ᵃ].
वस *vas*, descend (66).	व॑थु *wạth*ᵘ.	व॑छू *wạtsh*ᵘ.	व॑थि *wạth*ⁱ.	वछ *watsh*ᵃ.

Verb.	PAST PARTICIPLE.			
	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
लस *las*, live long (27, 28, 33, 67, 96).	लूस्तु *lūstᵘ*.*	लूत्सा *lūtsʰᵃ*.*	लूस्ति *lūstⁱ*.*	लात्सा *lātsʰᵃ*.*
लोस *lōs*, be weary (67, 96).	लूस्तु *lūsᵘ*.	लूस्ट *lūsᵃ* or लूत्सा *lūtsʰᵃ*.	लूसि *lūsⁱ*.	लोस *lōsᵃ* लोत्सा *lōtsʰᵃ*.
मर *mar*, die (26, 31, 59). मर *mar*, unite, is regular.	मूद्तु *mūdᵘ*.	म्वय *mŏyᵃ*.	मूदि *mūdⁱ*.	म्वय *mŏyᵃ*.
ह्यि *hi*, take (32).	ह्युत्तु *hyatᵘ*.	ह्यच्चू *hĕtsᵃ*.	ह्यति *hĕtⁱ*.	ह्यत्स *hĕtsᵃ*.
दि *di*, give (32).	द्युत्तु *dyutᵘ*.	दित्सू *ditsᵃ*.	दिति *ditⁱ*.	दित्स *ditsᵃ*.
ख्यि *khi*, eat (viii. iii. 6, ix. i. 37).	ख्योव् *khyauv*.	ख्यय *khĕyᵃ*.	ख्येय् *khyēy*.	ख्यय *khĕyᵃ*.
च्यि *ci*, drink (viii. iii. 6, ix. i. 37).	च्योव् *cyauv*.	च्यय *cĕyᵃ*.	च्येय् *cyēy*.	च्यय *cĕyᵃ*.
न्यि *ni*, take (viii. iii. 6, 34, ix. i. 38).	न्यूव् *nyūv*.	न्यय *niyᵃ*.	न्येय् *nīy*.	न्यय *niyᵃ*.

* लस *las*, is sometimes used regularly by the vulgar, thus, लस्तु *lasᵘ*, &c. (viii. iii. 96). In the fem. sing. Içvara-kaula sometimes writes लात्सा *lātsʰᵃ*, and sometimes लूत्सा *lūtsʰᵃ*. According to my Paṇḍit, the latter is the correct form.

Verb.	PAST PARTICIPLE.			
	SINGULAR.		PLURAL.	
	Masculine.	Feminine.	Masculine.	Feminine.
डेष *ḍēṣ*, see (viii. iii. 62).	द्यूठु *ḍyūṭhᵘ*.	डीठ्लू *ḍīṭhᵘ̄*.	डीठि *ḍīṭhⁱ*.	डेछ्य *ḍēchĕ*.
रोष *rōṣ*, be angry (24, 62).	रूठु *rūṭhᵘ*.	रूठ्लू *rūṭhᵘ̄*.	रूठि *rūṭhⁱ*.	रोछ्य *rōchĕ*.
मष *maṣ*, forget (62).	म॑ठु *mạṭhᵘ*.	म॑ठ्लू *mạṭhᵘ̄*.	म॑ठि *mạṭhⁱ*.	मछ्य *machĕ*.
ब्यह् *byah*, sit (22, 62).	ब्यूठु *byūṭhᵘ*.	बीठ्लू *bīṭhᵘ̄*.	बीठि *bīṭhⁱ*.	बेछ्य *bēchĕ*.
क्च़ *kᵃts*, be wet (63).	क्तु *kᵊtᵘ*.	क्च़्लू *kᵊtsᵘ̄*.	क्ति *kᵊtⁱ*.	क्च़ *kᵃtsᵃ*.
ह्रच़ *hŏts*, decay (63).	ह्र॑तु *họ̆tᵘ*.	ह्र॑च़्लू *họ̆tsᵘ̄*.	ह्र॑ति *họ̆tⁱ*.	ह्रच़ *hŏtsᵃ*.
दज़ *daz*, be burnt (64).	द॑दु *dạdᵘ*.	द॑ज़्लू *dạzᵘ̄*.	द॑दि *dạdⁱ*.	दज़ *dazᵃ*.
रोज़ *rōz*, stop (64).	रूदु *rūdᵘ*.	रूज़्लू *rūzᵘ̄*.	रूदि *rūdⁱ*.	रोज *rōzᵃ*.
व्वपज़ *wŏpaz*, be born (64).	व्वप॑दु *wŏpạdᵘ*.	व्वप॑ज़ू *wŏpạzᵘ̄*.	व्वप॑दि *wŏpạdⁱ*.	व्वपज़ *wŏpazᵃ*.
हहर *hahar*, to marry off (a girl) (76).	हह॑रु *hahạrᵘ* (rare).	हह॑रू *hahạrᵘ̄* or हर॑शू *haraçᵘ̄*.	हह॑रि *hahạrⁱ* (rare).	हहर्य *haharĕ*, or हरश्य *haraçĕ*.

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4 (*b*). The Past Tense.

This tense is peculiar to the first and second conjugations. It does not occur in the third conjugation. It describes something which has happened lately, *e.g.*, क॑रुन् *kạrun*, he has (just) made.

It is formed from the Past Participle in उ् ^{u}. This Participle is Passive in the case of verbs of the first conjugation. Thus, क॑रु् *kạr*^{u}, done, अ॑सु् *ạs*^{u} (impersonal verb), laughed. It is Neuter in the case of verbs of the second conjugation. Thus, ब्वु् *bŏv*^{u}, become. Verbs of the first conjugation are therefore passive in construction. Instead of saying 'I made this,' we must say 'this was made by me,' इह् म्य क॑रु् *yih mĕ kạr*^{u}, this (*yih*) by me (*mĕ*) made (*kạr*^{u}). Here the original object of the sentence has become the grammatical subject, and the logical subject has been put into the case of the agent. If the object (grammatical subject) is feminine, the participle must be feminine. If it is plural, the participle must be plural. Thus,—

क॑रु् म्य क॑रु् *kạr*^{u} *mĕ kạr*^{u}, the bracelet (masc.) was made by me.

प॑टू म्य क॑रू् *pạṭ*^{ū} *mĕ kạr*^{ū}, the tablet (fem.) was made by me.

क॑रि म्य क॑रि *kạr*^{i} *mĕ kạr*^{i}, the bracelets were made by me.

पच्य म्य कर्य *pacĕ mĕ karĕ*, the tablets were made by me.

As regards the original subject, it is put in the agent case, and may also be added to the verb in the form of a pronominal suffix of the agent case. This *must* always be done in the second person singular and plural. These suffixes are given on pp. 15 and ff. For the sake of ready reference, they are here repeated.

	Singular.	Plural.
1st Person.	अम् *am.*	———
2nd ,,	अथ् *ath.*	अव *aw*^{a}.
3rd ,,	अन् *an.*	अख् *akh.*

The initial अ *a* is elided when following a vowel.

When the pronominal suffix is added to a verb (it is *always* added in the case of the second person), the original subject (now agent), if a pronoun, may be omitted. Thus, for 'he made,' we may say,—

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(*a*) त॑मि क॑रु *tạm*^{i} *kạr*^{u}, by him made,

or (*b*) त॑मि क॑रुन् *tạm*^{i} *kạru-n*, by him made-by-him,

or (*c*) क॑रुन् *kạru-n*, made-by-him.

In the second person we cannot use the first or (*a*) form. We can only say,—

(*b*) च़ क॑रुथ् *tsĕ kạru-th*, by thee made-by-thee,

or (*c*) क॑रुथ् *karu-th*, made-by-thee.

So in the plural.

(*b*) त्वह्य क॑रुव *tŏhĕ kạr*^{u}*-w*^{a}, by you made-by-you,

or (*c*) क॑रुव *kạr*^{u}*-w*^{a}, made-by-you.

We cannot say च़ क॑रु *tsĕ kạr*^{u} or त्वह्य क॑रु *tŏhĕ kạr*^{u}.

This Passive construction is called in Sanskrit Grammar the *karmaṇi prayōga*, and is described in Īçvara-kaula's Grammar under that name (viii. iii. 3).

The Impersonal Construction.

Impersonal verbs are used passively with all persons. The terminations are the same as in the case of active verbs. An example is,—

(*a*) त॑मि अ॑सु *tạm*^{i} *ạs*^{u}, by him it was laughed,

or (*b*) त॑मि अ॑सुन् *tạm*^{i} *ạsu-n*, by him it was laughed-by-him,

or (*c*) अ॑सुन् *ạsu-n*, it was laughed-by-him,

all three of which mean 'he laughed' (viii. iii. 3). So अ॑सुम् *ạsu-m*, I laughed.

The two verbs चुव *tsuv*, quarrel, and मोरव *mōrav*, bear pain, may be used impersonally, and are then put in the feminine (viii. iii. 9).

Thus, चुवून् *tsuv*^{ū}*n*, quarrelling was done-by-him, he quarrelled, the verb agreeing with the nominative हर् *har*, a quarrel, which is feminine. So मोर॑वून् *mōrạv*^{ū}*n*, pain was suffered-by-him, he suffered pain, the true nominative being some feminine word like पीड् *pīḍ*, pain, understood.

In these cases we may use all the three forms, except, as before, in the second person. Thus,—

(*a*) त॑मि चुवू *tạm*^{i} *tsuv*^{ū},

or (*b*) त॑मि चुवून् *tạm*^{i} *tsuv*^{ū}*n*,

or (*c*) चुचून् *tsuv*^{ū}*n*.

These two words can even be used in the fem. plur. Thus, चुव्यन्, he quarrelled (many times); मोरव्यन् *mōravyan*, he suffered pains.

The following verbs (repeated from pp. 16 and 22) are also impersonal but have this peculiarity that they are conjugated with suffixes of the dative instead of suffixes of the agent, and are also in the feminine.

च़र *tsar*, be inwardly wrathful.

फ़श *phŏç*, ditto.

फुह *phuh*, ditto.

मर्च *marts*, ditto.

वुच़ *wuts*, be burnt.

फिच़ *phits*, forget.

त्यंब *tyamb*, look eagerly (conjugated in the third conjugation).

Thus, च॑रूस् *tsạr^{a}-s*, not च़॑रून् *tsạr^{a}-n*, there was inward anger to him, he was angry.

च़॑रूय् *tsạr^{a}-y*, not च़॑रूथ् *tsạr^{a}-th*, thou wast angry.

च़॑रूम् *tsạr^{a}-m*, I was angry.

So वुच़ूय् *wuts^{a}y*, thou wast burnt. These verbs are given here, because the first six are used in the Past Tense. त्यंब *tyamb*, look eagerly, belongs to the third conjugation, and does not use the Past Tense.

This impersonal construction, whether with the Dative or with the Agent, is called in Sanskrit, the *bhāvē-prayōga*.

Neuter Verbs.

Neuter verbs of the second conjugation, having their Past Participle neuter, are conjugated, in the Past tenses actively. They thus take the pronominal suffixes of the nominative, and agree with the subject of the sentence in number and person. The addition of the pronominal suffixes is obligatory.

They are here quoted for ready reference.

	Singular.	Plural.
1.	अस् *as*.	———
2.	अख् *akh*.	अव *aw^{a}*.
3.	———	———

There are no nominative suffixes of the first person plural or of the third person.

Taking, therefore, the verb ब्वव *bŏv*, become, for 'I became' we may say,—

(*b*) ब्वह् ब्वुस् *bŏh bọ̆vu-s*,

or (*c*) ब्वुस् *bọ̆vu-s*.

We cannot say ब्वह् ब्वव् *bŏh bọ̆v*^{u}, any more than we can say त्वह्य कॅरु *tŏhĕ kạr*^{u}.

These preliminaries being understood, I shall, in the paradigms, only give the (*c*) forms of the past tenses. From these the (*b*) forms and (when they exist) the (*a*) forms can easily be deduced.

A. First Conjugation.

(*a*) **Transitive Verb** (viii. iii. 3–9) (*c*. forms only) 'I made,' *Lit.* 'he, she, it, &c., was (were) made by me, you, him, us, &c.'

	Singular.		Plural.	
	Masculine.[1] कॅरु *kạr*^{u}, made.	Feminine.[1] कॅरू *kạr*^{ū}.	Masculine.[1] कॅरि *kạr*^{i}.	Feminine.[1] कर्य *karĕ*.
Sing.				
1	कॅरुम् *kạru-m*.	कॅरूम् *kạr*^{ū}*-m*.	कॅरिम् *kạri-m*.	कर्यम् *karya-m*.[2]
2	कॅरुथ् *kạru-th*.	कॅरूथ् *kạr*^{ū}*-th*.	कॅरिथ् *kạri-th*.	कर्यथ् *karya-th*.
3	कॅरुन् *kạru-n*.	कॅरून् *kạr*^{ū}*-n*.	कॅरिन् *kạri-n*.	कर्यन् *karya-n*.
Plur.				
1	कॅरु *kạr*^{u}.	कॅरू *kạr*^{ū}.	कॅरि *kạr*^{i}.	कर्य *karĕ*.
2	कॅरुव *kạr*^{u}*-w*^{a}.	कॅरूव *kạr*^{ū}*-w*^{a}.	कॅरिव *kạr*^{i}*-w*^{a}.	कर्यव *karĕ-w*^{a}.
3	कॅरुख् *kạru-kh*.	कॅरूख् *kạr*^{ū}*-kh*.	कॅरिख् *kạri-kh*.	कर्यख् *karya-kh*.

Verbs ending in vowels are slightly irregular in the masculine singular and plural, and in the feminine singular, which latter is the

[1] *E.g.* The object of the sentence, which has now become the grammatical subject, as explained above.

[2] Or *karĕ-m*, and so throughout.

same as the feminine plural (viii. iii. 6). None of these verbs belong to the second conjugation.

As usual there are two groups of these verbs, *viz.*, those which change their final vowel, *i*, to *ya*, such as खि *eat*, and others (*vide* p. 1) and those which do not, which are three in number, नि *ni*, take, दि *di*, give, and यि *yi*, come, of which the last belongs to the third conjugation. Taking the verb खि *khi*, eat, we get.

	Singular.		Plural.	
	Masculine. ख्यौव् *khyauv.*	Feminine. ख्यय *khĕy*ª.	Masculine. ख्येय् *khyēy.*	Feminine. ख्यय *khĕy*ª.
Sing.				
1	ख्योम् *khyō-m* or ख्यौम् *khyau-m* (ix. i. 37).	ख्ययम् *khĕya-m.*	ख्येम् *khyē-m.*	Same as singular.
2	ख्योथ् *khyō-th* or ख्यौथ् *khyau-th.*	ख्ययथ् *khĕya-th.*	ख्येथ् *khyē-th.*	
3	ख्योन् *khyōn* or ख्यौन् *khyau-n.*	ख्ययन् *khĕya-n.*	ख्येन् *khyē-n.*	
Plur.				
1	ख्यौव् *khyauv.*	ख्यय *khĕy*ª.	ख्येय् *khyēy.*	
2	ख्योव *khyō-w*ª or ख्यौव *khyau-w*ª.	ख्ययव *khĕy*ª*-w*ª.	ख्येव *khyē-w*ª.	
3	ख्योख् *khyō-kh* or ख्यौख् *khyau-kh.*	ख्ययख् *khĕya-kh.*	ख्येख् *khyē-kh.*	

Similarly is conjugated, चि *ci*, drink.

The verb नि take, is further irregular (viii. iii. 6, 34; ix. i. 38).

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
Sing.				
1	न्यूम् *nyū-m.*	नियम् *niya-m.*	नीम् *nī-m.*	Same as singular.
2	न्यूथ् *nyū-th.*	नियथ् *niya-th.*	नीथ् *nī-th.*	
3	न्यून् *nyū-n.*	नियन् *niya-n.*	नीन् *nī-n.*	
Plur.				
1	न्यूव् *nyūv.*	निय *niy°.*	नीय् *nīy.*	
2	न्यूव *nyū-w°.*	नियव *niy°-w°.*	नीव *nī-w°.*	
3	न्यूख् *nyū-kh.*	नियख् *niya-kh.*	नीख् *nī-kh.*	

The verbs ह्यि *hi*, take, and द्यि *di*, give, are still further irregular (viii. iii. 7, 32). Thus,—

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
Sing.				
1	ह्यतुम् *hyatu-m.*	ह्यचूम् *hĕʦ°-m.*	ह्यतिम् *hĕti-m.*	ह्यत्रम् *hĕʦa-m.*
2	ह्यतुथ् *hyatu-th.*	ह्यचूथ् *hĕʦ°-th.*	ह्यतिथ् *hĕti-th.*	ह्यत्रथ् *hĕʦa-th.*
3	ह्यतुन् *hyatu-n.*	ह्यचून् *hĕʦ°-n.*	ह्यतिन् *hĕti-n.*	ह्यत्रन् *hĕʦa-n.*

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
Plur.				
1	ह्य॑तु *hyạt*^{u}.	ह्य॑चू *hẹ̆ts*^{ā}.	ह्य॑ति *hẹ̆t*^{i}.	ह्यत्त *hĕts*^{a}.
2	ह्य॑तुव *hyạt*^{u}*-w*^{a}.	ह्य॑चूव *hẹ̆ts*^{ā}*-w*^{a}.	ह्य॑तिव *hẹ̆t*^{i}*-w*^{a}.	ह्यत्तव *hĕts*^{a}*-w*^{a}.
3	ह्य॑तुख् *hyạtu-kh*.	ह्य॑चूख् *hẹ̆ts*^{ā}*-kh*.	ह्य॑तिख् *hẹ̆ti-kh*.	ह्यत्तख् *hĕtsa-kh*.

दि *di*, give, is similarly declined, but its first person is दितुम् or द्युतुम् *dyutu-m*, दिचूम् *dits*^{ā}*-m*, दितिम् *diti-m*, दित्तम् *ditsa-m*, and so throughout.

The verb हहर *hahar*, to get a girl married, is of necessity, conjugated in the past tenses only in the feminine. Moreover it forms its feminine Past Participle, optionally, in an irregular fashion (viii. iii. 76), Thus, हह॑रून् *hahạr*^{ā}*-n* or हर॑शून् *harạç*^{ā}*-n*, he got her married.

Notes. (1) Once for all. By the first person singular, is meant, 'I made him, her, them (masc.), or them (fem.),' literally, 'he, she, they (masc.), or they (fem.) were made by me.' So the second person singular means 'thou madest him, her, them (masc.), or them (fem.),' and so on, through the other persons.

(2) There is no suffix for the first person plural. Hence this form is always the same as the past participle.

(*b*) **Impersonal Verb** (viii. iii. 3–9) (*c.* forms only), 'I laughed,' literally, 'it was laughed by me,' &c.

Singular 1 अ॑सुम् *ạsu-m*, I laughed.
2 अ॑सुथ् *ạsu-th*, thou laughedst.
3 अ॑सुन् *ạsu-n*, he laughed.

Plural 1 अ॑सु *ạs*^{u}, we laughed.
2 अ॑सुव *ạs*^{u}*-w*^{a}, you laughed.
3 अ॑सुख् *ạsu-kh*, they laughed.

When an Impersonal Verb is conjugated in the feminine (see pp. 22 and 48), we get forms such as the following, (चुव *ʦuv*, quarrel) (viii. iii. 9),—

Singular 1 चुवम् *ʦuvᵃ-m*, I quarrelled.
2 चुवथ् *ʦuvᵃ-th*, thou didst quarrel.
3 चुवन् *ʦuvᵃ-n*, he quarrelled.
Plural 1 चुव *ʦuvᵃ*, we quarrelled.
2 चुवव *ʦuvᵃ-wᵃ*, you quarrelled.
3 चुवख् *ʦuvᵃ-kh*, they quarrelled.

If such an Impersonal Verb is conjugated in the plural, we get—

Singular 1 चुव्यम् *ʦuvya-m*, I quarrelled many times, and so on.
2 चुव्यथ् *ʦuvya-th*.
3 चुव्यन् *ʦuvya-n*.
Plural 1 चुव्य *ʦuvĕ*.
2 चुव्यव *ʦuvya-wᵃ*.
3 चुव्यख् *ʦuvya-kh*.

So मोरव *mōrav*, bear pain.

च्रर *ʦar* and the others are thus conjugated (see pp. 16, 22, and 49).

Singular 1 च्रर्‍ऽम् *ʦaṛᵃ-m*, I was inwardly angry, and so on.
2 च्रर्‍ऽय् *ʦaṛᵃ-y*.
3 च्रर्‍ऽस् *ʦaṛᵃ-s*.
Plural 1 च्रर्‍ऽ *ʦaṛᵃ*.
2 च्रर्‍ऽव *ʦaṛᵃ-wᵃ*.
3 च्रर्‍ऽख् *ʦaṛᵃ-kh*.

In the case of Transitive verbs, when the grammatical subject (*i.e.*, the logical object) is a pronoun, it may be added to the verb in the shape of an additional pronominal suffix in the Nominative case. The following are the masculine forms which occur. The feminine ones can easily be made on the same principle.

From कर्‍ऽम् *kaṛu-m*, made by me, I made.
कर्‍ऽमख् *kaṛᵃ-m-akh*, thou wast made by me, I made thee.
So कर्‍ऽमख् *kaṛᵃ-m-akh*, thou (fem.) wast made by me, I made thee (fem.).

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[क॑रु्मन् *kạrᵘ-m-an*, I made him, is not used. We always say सुह् क॑रुम् *suh kạru-m*. क॑रु्मस् *karᵘ-m-as* means 'I made for him.']

क॑रि्मव *kạrⁱ-m-awᵃ*, I made you.

[क॑रि्मख् *kạrⁱ-m-akh*, I made them, is not used. We always say तिम् क॑रिम् *tim kạri-m*. क॑रि्मख् *kạrⁱ-m-akh* means 'I made them for them.']

From क॑रुथ् *kạru-th*, made by thee, thou madest.

क॑रु्थस् *kạrᵘ-th-as*, thou madest me (or thou madest for him).

क॑रु्थन् *kạrᵘ-th-an*, thou madest him.

क॑रि्थख् *kạrⁱ-th-akh*, thou madest them (or for them).

From क॑रुन् *kạru-n*, made by him, he made.

क॑रु्नस् *kạrᵘ-n-as*, he made me (or he made for him).

क॑रु्नख् *kạrᵘ-n-akh*, he made thee (or he made for them).

[क॑रु्नन् *kạrᵘ-n-an*, he made him, is not used. We say सुह् क॑रुन् *suh kạrun*.]

क॑रि्नव *kạrⁱ-n-awᵃ*, he made you (or for you).

[क॑रि्नख् *kạrⁱ-n-akh*, he made them, is not used. We say तिम् क॑रिन् *tim kạri-n*. क॑रि्नख् *kạrⁱ-n-akh*, means 'he made them for them.']

From क॑रु् *kạrᵘ*, made by us, we made.

क॑रुख् *kạru-kh*, we made thee.

[क॑रुन् *kạru-n*, we made him, is not used. We say सुह क॑रु् *suh kạrᵘ*].

क॑रि्व *kạrⁱ-wᵃ*, we made you.

[क॑रिख् *kạri-kh*, we made them, is not used. We say तिम् क॑रि् *tim kạrⁱ*].

From क॑रु्व *kạrᵘ-wᵃ*, made by you, you made.

क॑रु्वस् *kạrᵘ-wa-s*, you made me (or for him)

क॑रु्वन् *kạrᵘ-wa-n*, you made him.

क॑रि्वख् *kạrⁱ-wa-kh*, you made them.

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From क॑रुख् *kạru-kh*, made by them, they made.

क॑रुहस् *kạr^{u}-h-as*, they made me (or they made for him).

क॑रु्हख् *kạr^{u}-h-akh*, they made thee (or for them).

[क॑रु्हन् *kạr^{u}-h-an*, they made him, is not used. We say, सुह् क॑रुख् *suh kạru-kh*].

क॑रि्हव *kạr^{i}-h-aw^{a}*, they made you.

[क॑रि्हख् *kạr^{i}-h-akh*, they made them, is not used. We say, तिम् क॑रिख् *tim kạri-kh*. क॑रि्हख् *kạr^{i}-h-akh*, means 'he made them for them'].

There being no suffix for the first person plural, there are no special forms for thou, he, you, or they made us.

With regard to all these forms, the full forms of the pronouns may also be used, with, or without the suffixes. Thus,—

We may say either

(*a*) म्य क॑रु्मख् च़्ह् *mĕ kạr^{u}-m-akh ts^{a}h*, by me was-made-by-me-thou thou, or

(*b*) क॑रु्मख् च़्ह् *kạr^{u}-m-akh ts^{a}h*, was-made-by-me-thou thou, or

(*c*) म्य क॑रु्मख् *mĕ kạr^{u}-m-akh*, by me was-made-by-me-thou, or

(*d*) क॑रु्मख् *kạr^{u}makh*, was-made-by-me-thou, or

(*e*) म्य क॑रुख् च़्ह् *mĕ kạru-kh ts^{a}h*, by me was-made-thou thou, or

(*f*) म्य क॑रुख् *mĕ kạru-kh*, by me was-made-thou.

We cannot, however, use the two following forms.

(*g*) म्य क॑रु् च़्ह् *mĕ kạr^{u} ts^{a}h*, by-me was-made thou or

(*h*) क॑रुम् च़्ह् *kạru-m ts^{a}h*, was-made-by-me thou.

In other words when the full form of the pronoun in the nominative is used, the corresponding suffix must always accompany it.

Other pronominal suffixes can similarly be used. Thus, क॑रु्मय् *kạr^{u}-m-ay*, I made for thee.

B. Second Conjugation.

Neuter Verb (viii. iii. 77–97). (*c.* Forms only).

I became, &c.

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	ब्वंवुस् *bŏṿu-s.*	ब्वंवूस् *bŏṿᵘ-s.*	ब्वंवि *bŏṿⁱ.*	ब्वव *bŏvĕ.*
2	ब्वंवुख् *bŏṿu-kh.*	ब्वंवूख् *bŏṿᵘ-kh.*	ब्वंविव *bŏṿⁱ-wᵃ.*	ब्वयव *bŏvĕ-wᵃ.*
3	ब्वंव् *bŏṿᵘ.*	ब्वंव *bŏṿᵘ.*	ब्वंवि *bŏṿⁱ.*	ब्वव *bŏvĕ.*

The verb मर *mar*, die, has its past tense irregular. It is thus conjugated (viii. iii. 26, 31, 59, 65, 92).

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	मूदुस् *mūdu-s.*	म्वयस् *mŏya-s.*	मूदि *mūdⁱ.*	म्वय *mŏyᵃ.*
2	मूदुख् *mūdu-kh.*	म्वयख् *mŏya-kh.*	मूदिव *mūdⁱ-wᵃ.*	म्वयव *mŏyᵃ-wᵃ.*
3	मूद् *mūdᵘ.*	म्वय *mŏyᵃ.*	मूदि *mūdⁱ.*	म्वय *mŏyᵃ.*

When मर *mar* means to unite, it is regular. Thus, मरुन् *marun*, he united him.

5 (*a.*) The Verbal Aorist Participle.

This participle occurs in all three conjugations. In the first and second (viii. iii. 78) conjugations it is a true aorist. It expresses past time indefinitely, with no reference to proximity or distance. *E.g.*, कर्यव् *karyōv*, he (was) made (by us), we made; ब्वयोव् *bŏvyōv*, he became. It is therefore the participle, and the aorist is the tense, of narration in these two conjugations.

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In the third conjugation, it is used instead of the past participle; and describes something which has happened lately. Thus, वुफ्योव् *wuphyōv*, he flew (a short time ago).

This participle is formed in the first and second conjugations by changing the final य *y*ᵃ (*ĕ*) of the feminine plural of the past participle to योव् *yŏv*. Thus, कर *kar*, do; past participle क॑रु *kạrᵘ*, fem. plur. कर्य *karĕ*; aorist participle कर्योव् *karyŏv*.

In those cases, in which the feminine plural ends in अ *a*, instead of in य *y*ᵃ (*ĕ*), (see p. 42) the aorist participle ends in ओव् *ōv*, not in योव् *yŏv*. Thus, दज़ *daz*, burn; past participle द॑दु *dạdᵘ*, fem. plur. दज़ *dazᵃ*; aorist participle दज़ोव् *dazōv*. There are four exceptions (viii. iii. 49, 81). The aorist participle of क्च़ *kᵃts*, be moist, is क्च्योव् *kᵃtsyōv*; that of व्यच़ *vyats*, pervade, is व्यच्योव् *vyatsyōv*; that of रोच़ *rōts*, be preferred, रोच्योव् *rōtsyōv*; [and that of वुच़ *wuts*, be burnt, वुच्योव् *wutsyōv*]. Note that in the fem. pl. Past, in these verbs, the य *y* is elided. Thus क्च़ *kᵃtsᵃ*, not क्च्य़ *kᵃtsĕ*; व्यच़ *vyatsᵃ*, not व्यच्य़ *vyatsĕ*; रोच़ *rōtsᵃ* not रोच्य़ *rōtsĕ* (viii. iii. 49, 81).

In the third conjugation, the aorist participle is formed by adding योव् *yōv* to the root direct. Thus, वुफ *wuph*, fly, aorist participle वुफ्योव् *wuphyōv*, but there are exceptions which will be dealt with later on.

Īçvara-kaula spells this participle indifferently with योव् *yōv* or with यौव् *yauv*. Both are pronounced the same, like योव् *yōv* (viii. iii. 39).

[The true termination of this participle is *yō*, the *v*, as well as the *y* of the plural to be noted later, are only added for the sake of euphony].

Special Rules for the First and Second Conjugations.

The base of the aorist participle of the first and second conjugations being the same as the feminine plural of the past participle, the final consonant of the verbal root undergoes certain changes (viii. iii. 69, 70, 71, 72, 73, 74, 75). For the same reason, in the aorist participle, the vowel of the verbal root remains unchanged (see page 41). The following are examples of the changes. The reader is referred to pp. 42 and ff. for details.

1	Root थक *thak*, be tired,	aorist participle	थच्योव् *thacyōv*.
2	,, लेख *lēkh*, write	,,	लेछ्योव् *lēchyōv*.
3	,, दग *dag*, pound	,,	दज्योव् *dajyōv*.

4 Root फट *phaṭ*, be split aorist participle फच्योव् *phacyōv.*
5 ,, मठ *maṭh*, forget ,, मच्योव् *machyōv.*
6 ,, गंड *gaṇḍ*, bind ,, गंज्योव् *ganjyōv.*
7 ,, कत *kat*, spin ,, कत्सोव् *katsōv.*
8 ,, व्यथ *wŏth*, arise ,, व्यत्सोव् *wŏtsahōv.*
9 ,, लद् *lad*, build ,, लज़ोव् *lazōv.*
10 ,, रन *ran*, cook ,, रञोव् *rañōv.*
11 ,, त्सल *tsal*, flee ,, त्सज्योव् *tsajyōv.*
12 ,, पिह *pih*, grind ,, पिय्योव् *piçyōv.*
13 ,, मुह *muh*, deceive ,, मुय्योव् *muçyōv.**
14 ,, सह *sah*, bear ,, सय्योव् *saçyōv.*
15 ,, ग्ह *g°h*, grind ,, ग्य्योव् *g°çyōv.*
16 ,, च्ह *ts°h*, suck ,, च्य्योव् *ts°çyōv.*

Nos. 7–10 are also examples of the elision of य *y*. The following are further examples, see p. 42 for details.

1 Root दि *di*, give aorist participle दित्सोव् *ditsōv.*
2 ,, हि *hi*, take ,, ह्यत्सोव् *hĕtsōv.*

The past participles of these two verbs are irregular, *vide* p. 45.

3 Root दज़ *daz*, burn, aorist participle दज़ोव् *dazōv.*
4 ,, बस *bas*, dwell ,, बसोव् *basōv.*
5 ,, कस *kas*, fry ,, कसोव् *kasōv.*

But from,—

6 Root ठास *ṭhās*, bury ,, ठासोव् *ṭhāsōv*, or ठास्योव् *ṭhāsyōv.*
7 ,, दस *das*, beat ,, दसोव् *dasōv*, or दस्योव् *dasyōv.*

And from—

8 Root क्त्स *k°ts*, be wet ,, only क्त्स्योव् *k°tsyōv* (p. 58).
9 ,, त्सस *tsas*, laugh loudly ,, only त्सस्योव् *tsasyōv* (p. 42).

Remember that all these changes occur only in the first and second conjugations. The rules for the third conjugation are quite different.

* My Paṇḍit prefers मुय्योव् *muhyōv.*

Special Rules for the Third Conjugation.

In this conjugation, the participle (and consequently, the tense formed from it) is not used as an aorist, but as a past; with the same meaning as the past participle of the first and second conjugations. It is *not* the tense of narration.

The aorist participle is formed by adding यॉव् *yōv* to the root. Thus, वुफ *wuph*, fly, वुफ्यॉव् *wuphyōv*. Before this the final consonant of a root is *not* liable to change, as it is in the case of verbs of the first and second conjugations. Thus, from ज़ेठ *zēṯh*, be long, a verb of the 3rd conjugation, the aorist participle is ज़ेथ्यॉव् *zēthyōv*, and not ज़ेच्यॉव् *zēchyōv*, as it would be, if the verb belonged to the 2nd conjugation.

Note also that in this conjugation, य् *y* is not elided after च् *ṯs*, छ् *ṯsh*, ज़् *z*, or ञ् *ñ* (viii. iii. 49). Içvara-kaula in this *sūtra* gives the following list of verbs, which do not elide य् *y*. It includes many of the verbs ending in these letters which belong to the third conjugation.

ग्रुच्च *grŏṯs*, be splashed out; च्चुच्च *ṯsŏṯs*, have insufficient means of livelihood; छ्चुच्च *ṯshŏṯs*, be empty; तेज़ *tēz*, be sharp; पज़ *paz*, be fit; ब्रज़ *braz*, shine; बावज़ *bāwaz*, be preferred; ल्यच्च *lĕṯs*, be weak; श्रीच्च *çrōṯs*, be pure. Thus, ग्रुच्यॉव् *grŏṯsyōv*, not ग्रुच्चॉव् *grŏṯsōv*.

The other verbs belonging to the third conjugation, which end in these letters, and which are not mentioned by Içvara-kaula in the above *sūtra* are the following:—

अच्च *aṯs*, enter; त्रच्च *traṯs*, fear; म्वच्च *mŏṯs*, remain over and above; अछ *aṯsh*, be weak; गछ *gaṯsh*, go; पल्लज़ *palaz*, be useful; रञ्ज *ranz*, be pleased; लज़ *laz*, be suitable; वुज़ *wuz*, be wide awake, appear. सपज़ *sapaz*, become, is considered the same as सपन *sapan*, or सपद् *sapad*, and belongs to the second conjugation. According to my Paṇḍit पल्लज़ *palaz*, above recorded, belongs to the second conjugation.

According to my Paṇḍit, of these, त्रच्च *traṯs* and अछ *aṯsh*, always retain य *y*. The others retain it optionally except अच्च *aṯs* and गछ *gaṯsh*, which are irregular. See below, pp. 64 and 65.

Moreover, य् *y* is not, in this conjugation, elided after स् *s*. All the examples of the elision of य् *y* after this letter given by Içvara-kaula belong either to the first or second conjugation.

The Aorist Participle Generally.

The masculine plural of this participle is formed by changing the final यॉव् *yōv* to येय् *yēy*. Thus, कर्यॉव् *karyōv*, plural कर्येय् *karyēy* (viii. iii. 15). The feminine is formed यॉव् *yōv* to येय *yēy*ᵃ (viii. iii. 16). The feminine singular and the feminine plural are the same. Thus, कर्यॉव् *karyōv*, fem. sing. and plur. कर्येय *karyēy*ᵃ.

When the base of the participle ends त्स् *ts*, क्ष् *tsh*, ज़् *z*, or ञ् *ñ*, and elides the य *y* in यॉव् *yōv* of the masculine singular, the येय् *yēy* of the masculine plural becomes आय् *ā̤y* (viii. iii. 18), and the येय *yēy*ᵃ of the feminine, becomes आय *ā̤y*ᵃ (viii. iii. 17). Thus,—

Root कत *kat*, spin. Aorist part. कत्सॉव् *katsōv*; masc. pl. कत्साय् *katsā̤y*; fem. कत्साय *katsā̤y*ᵃ.

,, व्यथ *wŏth*, arise. Aorist part. व्यट्शॉव् *wŏtshōv*; masc. pl. व्यट्साय् *watsā̤y*; fem. व्यट्साय *wŏtshā̤y*ᵃ.

,, दज़ *daz*, burn. Aorist part. दज़ॉव् *dazōv*; masc. pl. दज़ाय् *dazā̤y*; fem. दज़ाय *dazā̤y*ᵃ.

,, रन *ran*, cook. Aorist part. रञॉव् *rañōv*; masc. pl. रञाय् *rañā̤y*; fem. रञाय *rañā̤y*ᵃ.

Most verbs of the third conjugation ending in these letters do not elide the य् *y* (see page 60). So also the verbs क्त्स *kᵃts*, व्यत्स *vyats*, रोत्स *rōts*, वुत्स *wuts* (see p. 58) of the second conjugation. These verbs form the masculine plural either in आय् *ā̤y* or एय् *ēy*, and the feminine in आय *ā̤y*ᵃ or एय *ēy*ᵃ (viii. iii. 17). Thus,—

Root क्त्स *kᵃts*, (second conjugation) be wet; masc. sing. क्त्यॉव् *kᵃtsyōv*; masc. plural क्त्साय् *kᵃtsā̤y* or क्त्सेय् *kᵃtsēy*.

,, श्रोत्स *çrōts*, (third conjugation) be pure; masc. sing. श्रोत्यॉव् *çrōtsyōv*; masc. plural श्रोत्साय् *çrōtsā̤y* or श्रोत्सेय् *çrōtsēy*.

,, तेज़ *tēz*, (third conjugation), be sharp; masc. sing. तेज़्यॉव् *tēzyōv*; masc. plural तेज़ाय् *tēzā̤y* or तेज़ेय् *tēzēy*.

The following verbs have irregular aorist participles. The irregularities are, of course, carried through the aorist tense.

VERB.	AORIST PARTICIPLE.			
	SINGULAR.		PLURAL.	
	Masculine.	Feminine.	Masculine.	Feminine.
हि *hi*, take (17, 32).	ह्यत्सोव् *hĕtsōv.*	ह्यत्सा॑य *hĕtsạ̄y*ᵃ.	ह्यत्सा॑य् *hĕtsạ̄y.*	
दि *di*, give (17, 32).	दित्सोव् *ditsōv.*	दित्सा॑य *ditsạ̄y*ᵃ.	दित्सा॑य् *ditsạ̄y.*	
खस *khas*, mount (12, 66).	खत्सोव् *khatsōv* or खछोव् *khatshōv.*	खत्सा॑य *khatsạ̄y*ᵃ or खछा॑य *khatsạ̄y*ᵃ.	खत्सा॑य् *khatsạ̄y* or खछा॑य् *khatshạ̄y.*	
वस *was*, descend (12, 66).	वछोव् *watshōv.*	वछा॑य *watshạ̄y*ᵃ.	वछा॑य् *watshạ̄y.*	Same as singular.
लस *las*,* live long (18, 29, 67).	ला॑छोव् *lạ̄tshōv.*	ला॑छा॑य *lạ̄tshạ̄y*ᵃ.	ला॑छा॑य् *lạ̄tshạ̄y.*	
लोस *lōs*, be weary (67).	लोसोव् *lōsōv*, or लोछोव् *lōtshōv.*	लोसा॑य *lōsạ̄y*ᵃ or लोछा॑य *lōtshạ̄y*ᵃ.	लोसा॑य् *lōsạ̄y* or लोछा॑य् *lōtshạ̄y.*	
मर *mar*, die (30).	म्वयोव् *mŏyōv.*	म्वयेय *mŏyēy*ᵃ.	म्वयेय् *mŏyēy.*	

यि *yi*, come (53).				
Past.	याव् *āv.*	याय *āy°.*	याय् *āy.*	
Aorist.	यायोव् *āyōv.*	यायेय *āyēy°.*	यायेय् *āyēy.*	
Plup.	यायाव् *āyāv.*	यायेय *āyēy°.*	यायाय् *āyāy.*	
ज़ि *zi*, be born (54).				
Past.	ज़ाव् *zāv.*	ज़ाय *zāy°.*	ज़ाय् *zāy.*	Same as singular.
Aorist.	ज़ायोव् *zāyōv.*	ज़ायेय *zāyēy°.*	ज़ायेय् *zāyēy.*	
Plup.	ज़ायाव् *zāyāv.*	ज़ायेय *zāyēy°.*	ज़ायाय् *zāyāy.*	
नेर *nēr*, go forth (56).				
Past.	द्राव् *drāv.*	द्राय *drāy°.*	द्राय् *drāy.*	
Aorist.	द्रायोव् *drāyōv.*	द्रायेय *drāyēy°.*	द्रायेय् *drāyēy.*	
Plup.	द्रायाव् *drāyāv.*	द्रायेय *drāyēy°.*	द्रायाय् *drāyāy.*	

* ख़स *las* is sometimes used regularly by the vulgar. Thus, ख़सोव् *lasōv* (viii. iii. 96).

VERB.	AORIST PARTICIPLE.			
	SINGULAR.		PLURAL.	
	Masculine.	Feminine.	Masculine.	Feminine.
अच्च *ats*, enter (52, 57).				
Past.	च्चाव् *tsāv*.	च्चाय *tsāy*^{a}.	च्चाय् *tsāy*.	
Aorist.	च्चायोव् *tsāyōv*.	च्चायेय *tsāyēy*^{a}.	च्चायेय् *tsāyēy*.	
Plup.	च्चायाव् *tsāyāv*.	च्चायेय *tsāyēy*^{a}.	च्चायाय् *tsāyāy*.	Same as singular.
प्रस *pras*, be born (52, 55).				
Past.	प्याव् *pyāv*.	प्याय *pyāy*^{a}.	प्याय् *pyāy*.	
Aorist.	प्यायोव् *pyāyōv*.	प्यायेय *pyāyēy*^{a}.	प्यायेय् *pyāyēy*.	
Plup.	प्यायाव् *pyāyāv*.	प्यायेय *pyāyēy*^{a}.	प्यायाय् *pyāyāy*.	

पि *pi*, fall (48, 60).				
Past.	प्यौव् *pyauv.*	प्यय *pĕy°.*	प्यय् *pĕy.*	
Aorist.	प्ययोव् *pĕyōv.*	प्ययेय *pĕyēy°.*	प्ययेय् *pĕyēy.*	
Plup.	प्ययाव् *pĕyāv.*	प्ययेय *pĕyēy°.*	प्ययाय् *pĕyāy.*	
गछ *gaṭsh*, go (48, 58, 60).				
Past.	गौव् *gauv.*	गय *gay°.*	गय् *gay.*	
Aorist.	गयोव् *gayōv.*	गयेय *gayēy°.*	गयेय् *gayēy.*	Same as singular.
Plup.	गयाव् *gayāv.*	गयेय *gayēy°.*	गयाय् *gayāy.*	
ड्येष *ḍēṣ*, see (62).	ड्येच्योव् *ḍēchyōv.*	ड्येच्येय *ḍēchyēy°.*	ड्येच्येय् *ḍēchyēy.*	
रोष *rōṣ*, be angry (62).	रोच्योव् *rōchyōv.*	रोच्येय *rōchyēy°.*	रोच्येय् *rōchyēy.*	
मष *maṣ*, forget (62).	मच्योव् *machyōv.*	मच्येय *machyēy°.*	मच्येय् *machyēy.*	
ब्यह *byah*, sit (62).	बेच्योव् *bēchyōv.*	बेच्येय *bēchyēy°.*	बेच्येय् *bēchyēy.*	
हहर *hahar*, to get a girl married (76).	Not used.	हहर्येय *haharyēy°* or हरछ्येय *haraçyēy°.*	Not used.	

5 (*b*). The Aorist Tense.

This is formed from the Aorist Participle, exactly as the Past tense is formed from the Past Participle, except that a final व् *v* or a final य् *y* is always elided before a pronominal suffix (viii. iii. 41). Thus, कर्यॊव् *karyōv* + अम् *am*, made-by-me = कर्यॊम् *karyō-m*, not कर्यॊवम् *karyōv-am*. The अ *a* of अम् *am*, is elided under the general rules for pronominal suffixes (*vide* p. 15). So also forms like कुमल्यॊस् *kumalyō-s* (*kumalyōv* + *as*), he was tender for him; कुमल्येस् *kumalyē-s*, they were tender for him.

We thus get the following forms,—

A. First Conjugation.

(*a*). Transitive verb (viii. iii. 14). (*c*. forms only).

'I made,' *lit.* 'he, she, it, &c., was (were) made by me, you, him, us, &c.'

	Singular.		Plural.	
	Masculine. कर्यॊव् *karyōv*.	Feminine. कर्यॅय *karyēy*ª.	Masculine. कर्यॅय् *karyēy*.	Feminine. कर्यॅय *karyēy*ª.
Sing.				
1	कर्यॊम् *karyō-m*.	कर्यॅयम् *karyēya-m*.	कर्यॅम् *karyē-m*.	कर्यॅयम् *karyēya-m*.
2	कर्यॊथ् *karyō-th*.	कर्यॅयथ् *karyēya-th*.	कर्यॅथ् *karyē-th*.	कर्यॅयथ् *karyēya-th*.
3	कर्यॊन् *karyō-n*.	कर्यॅयन् *karyēya-n*.	कर्यॅन् *karyē-n*.	कर्यॅयन् *karyēya-n*.
Plur.				
1	कर्यॊव् *karyōv*.	कर्यॅय *karyēy*ª.	कर्यॅय् *karyēy*.	कर्यॅय *karyēy*ª.
2	कर्यॊव *karyō-w*ª.	कर्यॅयव *karyēy*ª-*w*ª	कर्यॅव *karyē-w*ª.	कर्यॅयव *karyēy*ª-*w*ª.
3	कर्यॊख् *karyō-kh*.	कर्यॅयख् *karyēya-kh*.	कर्यॅख् *karyē-kh*.	कर्यॅयख् *karyēya-kh*.

As regards verbs ending in vowels, the usual rule is followed Thus, from ख्हि *khi*, eat, the aorist participle is ख्हयोव् *khĕyōv*; and from च्हि *ci*, drink, च्हयोव् *cĕyov*.

From न्हि *ni*, take, we get, as usual नियोव् *niyōv*, not न्हयोव् *nĕyōv*. द्हि *di*, give and ह्हि *hi*, take, are, as in the Past, irregular. Of द्हि *di*, the Aorist Participle is दित्सोव् *ditsōv* (pl. दित्साय् *ditsāy*; fem. दित्साय *ditsāy*ª), and of ह्हि *hi*, हेत्सोव् *hĕtsōv* (pl. हेत्साय् *hĕtsāy*; fem. हेत्साय *hĕtsāy*ª) (viii. iii. 32). See p. 61.

Double pronominal suffixes can be added, as in the case of the Past. Thus, कर्यौथस् *karyō-th-as*, thou madest me; कर्यौमय् *karyō-m-ay*, I made for thee; कर्यौमस् *karyō-m-as*, I made for him. Other examples are unnecessary. The rules are exactly the same as in the case of the past tense. *Vide*, however, special cases mentioned after the Paradigm of the third conjugation (p. 70).

(*b*). Impersonal verb (viii. iii. 14). (*c*. forms only).

'I laughed,' *lit.* 'it was laughed by me,' &c.

Singular	1	असोम् *asō-m*	I laughed.
	2	असोथ् *asō-th*	thou laughedst.
	3	असोन् *asō-n*	he laughed.
Plural	1	असोव् *asōv*	we laughed.
	2	असोव *asō-w*ª	you laughed.
	3	असोख् *asō-kh*	they laughed.

When an impersonal verb is conjugated in the feminine (see pp. 22 and 48) we get

SINGULAR AND PLURAL.

Singular	1	च्हुय्येयम् *tsuvyēya-m*	I quarrelled.
	2	च्हुय्येयथ् *tsuvyēya-th*	thou didst quarrel.
	3	च्हुय्येयन् *tsuvyēya-n*	he quarrelled.
Plural	1	च्हुय्येय *tsuvyēy*ª	we quarrelled.
	2	च्हुय्येयव *tsuvyēy*ª*-w*ª	you quarrelled.
	3	च्हुय्येयख् *tsuvyēya-kh*	they quarrelled.

The feminine impersonal verbs च्रर *tsar*, &c., (see pp. 16, 22 and 49) have the following forms,—

च्रर्यॅयम् *tsaryēya-m*, I was inwardly wrathful.

च्रर्यॅयिय् *tsaryēyi-y* (with inserted *i*; see p. 70 *post*), thou wast inwardly angry.

च्रर्यॅयस् *tsaryēya-s*, he was inwardly angry.

And so on.

So also (viii. iii. 45) त्यंब्येयस् *tyambyēya-s* (3rd conj.), he glanced eagerly.

B. Second Conjugation.

Neuter verb (viii. iii. 39). (*c.* forms only).

'I became, &c.'

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	ब्वोस् *bŏvyō-s.*	ब्वेयस् *bŏvyēya-s.*	ब्वेय् *bŏvyēy.*	ब्वेय *bŏvyēy*ª.
2	ब्वोख् *bŏvyō-kh.*	ब्वेयख् *bŏvyēya-kh.*	ब्वेव *bŏvyē-w*ª.	ब्वेयव *bŏvyēy*ª-*w*ª.[1]
3	ब्वोव् *bŏvyōv.*	ब्वेय *bŏvyēy*ª.	ब्वेय् *bŏvyēy.*	ब्वेय *bŏvyēy*ª.

C. Third Conjugation.

Neuter verb वुफ *wuph*, fly (viii. iii. 39). (*c.* forms only).

'I flew (just now),' used in the sense of the Past, and not as the tense of the Aorist.

1st Sing. Masc. वुफ्योस् *wuphyō-s*, &c., exactly as in the second conjugation.

In this tense, the difference between the second and third conjugations consists in the formation of the Aorist Participle, as already explained, and not in the conjugation.

[1] Içvara-kaula (viii. iii. 44) gives ब्वेव *bŏvyēw*ª, but my Paṇḍit says this is a mistake. The form given above is the correct one.

The Aorist of पि *pi*, fall, used in the sense of the Past, is (viii. iii. 48, 60, 61),—

'I fell, &c.'

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	प्यौस् *pyau-s* (not प्योस् *pyō-s*).	प्यस् *pĕya-s*.	प्य् *pĕy*.	प्य *pĕy*ᵃ.
2	प्यौख् *pyau-kh*.	प्यख् *pĕya-kh*.	प्येव *pyē-w*ᵃ.	प्यव *pĕy*ᵃ-*w*ᵃ.
3	प्यौव् *pyauv*.	प्य *pĕy*ᵃ.	प्य् *pĕy*.	प्य *pĕy*ᵃ.

Note the specially irregular 2nd person plur. masc.

The Aorist of verb गछ् *gaʦh*, go, used in the sense of the past, is (viii. iii. 48, 58, 60, 61).

'I went, &c.'

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	गौस् *gau-s*.	गयस् *gaya-s*.	गय् *gay*.	गय *gay*ᵃ.
2	गौख् *gau-kh*.	गयख् *gaya-kh*.	गांव *gā̤-w*ᵃ.	गयव *gay*ᵃ-*w*ᵃ.
3	गौव् *gauv*.	गय *gay*ᵃ.	गय् *gay*.	गय *gay*ᵃ.

When this verb is used in the meaning of 'be proper,' it is regular, and belongs to the 2nd conjugation. Thus, गछु *gaʦh*ᵘ, it was proper (viii. iii. 58). In this sense it is only used in the Past. The Aorist and Pluperfect do not occur (82).

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There are also other irregular Aorists of this conjugation. There are those of the roots यि *yi*, come; ज़ि *zi*, be born; नेर *nēr*, go forth; अच़ *ats*, enter; प्रस *pras*, be born. The Aorist Participles, in the sense of the Past will be found in the list of irregular Aorist Participles, and no difficulty will be found in conjugating them. They are here given for ready reference.

AORIST PARTICIPLES.

यि *yi*, come.	आव् *āv*.
ज़ि *zi*, be born.	ज़ाव् *zāv*.
नेर *nēr*, issue.	द्राव् *drāv*.
अच़ *ats*, enter.	च़ाव् *tsāv*.
प्रस *pras*, be born.	प्याव् *pyāv*.

The feminine and masculine plurals are given in the list of Aorist Participles. It will be seen that they must be conjugated as if they were Pluperfects. Vide p. 74.

When the suffix of the dative of the second person singular is added to a form ending in ओव् *ōv*, ओ *ō* becomes व॑ *wạ* (*ọ̆*) (viii. iii. 43). Thus, कर्योव् *karyōv* + अय् *ay*, कर्य्व॑य् *karyọ̆y*,[1] we made for thee. वुफ्य्व॑य् *wuphyọ̆y*,[1] he flew for thee. गौव् *gauv* (root गछ *gatsh*), he went; ग्व॑य् *gọ̆y*, he went for thee. प्यौव् *pyauv*, he fell; प्य्व॑य् *pyọ̆y*, he fell for thee. The plural of गौव् *gauv*, is गय् *gay*, and 'they went for thee' is ग॑य् *gạy*. So, 'they fell for thee' is प्य॑य् *pyạy*.

[When the same form अय् *ay* is added to a form in य *y*ᵃ, इ *i* is inserted. Thus, कर्येय *karyēy*ᵃ, she was made by us; कर्येयिय् *karyēyi-y*, she was made by us for thee. Compare च़र्येयिय् *tsaryēyi-y* on p. 68 *ante*].

1 These are the forms according to the *Sūtra*. But my Paṇḍit maintains that the true forms are कर्योय् *karyō-y*, and वुफ्योय् *wuphyō-y*. The exceptional forms, he says, only occur in the case of the verbs गछ *gatsh*, go, and पि *pi*, fall. The *Sūtra* while making the rule absolutely general, only gives the two last-named verbs as examples.

6 (*a*). The Pluperfect Participle.

This participle occurs in all three conjugations. In the first two conjugations (viii. iii. 78), it expresses remote time. Thus, कर्याऩ् *karyā-n*, he made (a long time ago); ब्व्याव् *bŏvyāv*, he became (a long time ago).

In the third conjugation it is used in the sense of an Aorist Participle, and expresses past time indefinitely, with no reference to proximity or distance. It is hence the participle, and the Pluperfect is the tense, of narration in this conjugation. Thus, व्फ्याव् *wuphyāv*, he flew. In order to supply the place of Pluperfect, a new tense is formed in this conjugation, which may be called the True Pluperfect. Thus, व्फ्यियाव् *wuphiyāv*, he flew a long time ago.

The Pluperfect Participle is formed by changing the termination ओव् *ōv* of the aorist participle to आव् *āv* (viii. iii. 35). Thus Aorist Participle, कर्योव् *karyōv*; Pluperfect Participle, कर्याव् *karyāv*. In the first conjugation, the masculine plural is formed by inserting ए *ē*, before the termination of the masculine plural of the Aorist Participle. Thus, कर्योव् *karyōv*; masc. plur. कर्येय् *karyēy*; Pluperfect part. masc. plur. कर्येयेय् *karēyēy* (viii. iii. 36). When the Aorist masc. plural ends in ाय् *ạy* (*vide*, p. 61) this is changed to ायेय् *ạyēy*. Thus; Aorist Participle ह्लोव् *hĕɬsōv*, taken; masc. plur. ह्लाय् *hĕɬsạy*; Pluperfect Part. masc. plur. ह्लायेय् *hĕɬsạyēy* (viii. iii. 37). The feminine singular and plural are the same as those of the Aorist Participle (viii. iii. 38).

In the second and third conjugations, the masculine plural is formed by changing आव् *āv* of the singular to आय् *āy* (viii, iii, 40). See, however, p. 74. Thus व्फ्याव् *wuphyāv*, flown; masc. pl., व्फ्याय् *wuphyāy*. The feminine (singular and plural) is formed by changing आव् *āv* to एय *ēy*°. Thus व्फ्येयय *wuphyēy*° (viii, iii. 44).

6 (*b*). The Pluperfect Tense.

This is formed from the Pluperfect Participle, exactly as the Aorist Tense is formed from the Aorist Participle.

We thus get the following forms.

A. First Conjugation.

Transitive verb (viii. iii. 35). (*c.* forms only).

'I made,' *lit.*, 'he, she, it, etc., was (were) made by me, you, him, us, &c.'

	Singular.		Plural.	
	Masculine. कर्याव् *karyāv*, made.	Feminine. कर्येय *karyēy*ᵃ.	Masculine. करेयेय् *karēyēy*, made.	Feminine. कर्येय *karyēy*ᵃ.
Sing.				
1	कर्याम् *karyā-m.*	कर्येयम् *karyēya-m.*	करेयेम् *karēyē-m.*	कर्येयम् *karyēya-m.*
2	कर्याथ् *karyā-th.*	कर्येयथ् *karyēya-th.*	करेयेथ् *karēyē-th.*	कर्येयथ् *karyēya-th.*
3	कर्यान् *karyā-n.*	कर्येयन् *karyēya-n.*	करेयेन् *karēyē-n.*	कर्येयन् *karyēya-n.*
Plur.				
1	कर्याव् *karyāv.*	कर्येय *karyēy*ᵃ.	करेयेय् *karēyēy.*	कर्येय *karyēy*ᵃ.
2	कर्याव *karyā-w*ᵃ.	कर्येयव *karyēy*ᵃ*-w*ᵃ.	करेयेव *karēyē-w*ᵃ.	कर्येयव *karyēy*ᵃ*-w*ᵃ.
3	कर्याख् *karyā-kh.*	कर्येयख *karyēya-kh.*	करेयेख् *karēyē-kh.*	कर्येयख् *karyēya-kh.*

From खि *khi*, eat, we have ख्ययाम् *khĕyā-m*; plur. ख्ययेयेम् *khĕyēyē-m*. So from चि *ci*, drink.

From नि *ni*, take, नियाम् *niyā-m* and नियेयेम् *niyēyē-m*.

Similarly, from, हि *hi*, take, ह्यत्ताम् *hĕtsā-m*; plur. ह्यत्तायेम् *hĕtsạ̄yē-m*; and from दि *di*, give, दित्ताम् *ditsām*, and दित्तायेम् *ditsạ̄yē-m* (see p. 71).

Impersonal verbs are similarly conjugated. Thus, असाम् *asā-m*, I laughed. Those that are conjugated in the feminine (see pp. 16, 22, 49 and 68), are, of course, the same as the Aorist.

Double pronominal suffixes may be added, as in the case of the Past and the Aorist. Thus, कर्याथस् *karyā-th-as*, thou madest me; कर्यामय् *karyā-m-ay*, I made for thee; कर्यामस् *karyā-m-as*, I made for him. Further examples are unnecessary. See, however, the special cases mentioned after the paradigm of the third conjugation (p. 75).

B. Second Conjugation.

Neuter verb (viii. iii. 40). (*c.* forms only).

'I became a long time ago.'

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	बुव्यास् *bŏvyā-s.*	बुव्येयस् *bŏvyēya-s.*	बुव्याय् *bŏvyāy.*	बुव्येय *bŏvyēy°.*
2	बुव्याख् *bŏvyā-kh.*	बुव्येयख् *bŏvyēya-kh.*	बुव्याव *bŏvyā-w°.*	बुव्येयव *bŏvyēy°-w°.*
3	बुव्याव् *bŏvyāv.*	बुव्येय *bŏvyēy°.*	बुव्याय् *bŏvyāy.*	बुव्येय *bŏvyēy°.*

C. Third Conjugation.

In this conjugation, the tense has merely the meaning of an Aorist, not of a Pluperfect, and is the tense used in narration. It is conjugated as follows.

Neuter verb (viii. iii. 40, 44). (*c.* forms only).

'I flew, &c.'

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	वुप्यास् *wuphyā-s.*	वुप्येयस् *wuphyēya-s.*	वुप्याय् *wuphyāy.*	वुप्येय *wuphyēy°.*
2	वुप्याख् *wuphyā-kh.*	वुप्येयख् *wuphyēya-kh.*	वुप्याव *wuphyā-w°.*	वुप्येयव *wuphyēy°-w°.*[1]
3	वुप्याव् *wuphyāv.*	वुप्येय *wuphyēy°.*	वुप्याय् *wuphyāy.*	वुप्येय *wuphyēy°.*

[1] Içvara-kaula gives वुप्येव *wuphyē-w°*, which my Paṇḍit says is wrong.

In the plural masculine Içvara-kaula gives वुफ्येय् *wuphyēy*, but this is directly contrary to the rule (viii. iii. 40) of which the word is given as an example.

If it is desired to give the force of the pluperfect to a verb of the 3rd conjugation, we must insert an इ *i* before the याव् *yāv* of the participle. We thus get what I call the True-Pluperfect tense, which is as follows (viii. iii. 50).

TRUE PLUPERFECT (3rd conjugation only) (*c.* forms only).
'I flew (a long time ago), &c.'

	SINGULAR.		PLURAL.	
	Masculine.	Feminine.	Masculine.	Feminine.
Sing. 1	वुफियास् *wuphiyā-s.*	वुफियेयस् *wuphiyēya-s.*	वुफियाय् *wuphiyāy.*	वुफियेय *wuphiyēy°.*
2	वुफियाख् *wuphiyā-kh.*	वुफियेयख् *wuphiyēya-kh.*	वुफियाव *wuphiyā-w°.*	वुफियेयव *wuphiyēy°-w°.*
3	वुफियाव् *wuphiyāv.*	वुफियेय *wuphiyēy°.*	वुफियाय् *wuphiyāy.*	वुफियेय *wuphiyēy°.*

For the plural masculine Içvara-kaula gives (viii. iii. 40) as examples both म्वकल्हियेय् *mŏkaliyēy* and म्वकल्हियाय् *mŏkaliyāy*, we or they were released. According to his own rule, of which these are examples, the latter is the correct form. For the second person plural feminine he gives (44) नवियेव *naviyēw°*, you became new, which, according to my Paṇḍit is incorrect for नवियेयव *naviyēy°-w°*.

This form cannot be used after cases ending in च् *ts*, छ *tsh*, ज़् *z*, or ञ् *ñ*. Thus, plup. तेज़्याव् *tēzyāv*, not तेज़ियाव् *tēziyāv* (viii. iii. 51).

As an example of the True Pluperfect of the feminine impersonal verbs (see pp. 16, 22, 49, 54, 67, and 68), we may give (viii. iii. 45)

त्यंवियेयम् *tyambiyēya-m*, I glanced eagerly.

त्यंवियेयिय् *tyambiyēyi-y* (see p. 70), thou didst glance eagerly.

त्यंवियेयस *tyambiyēya-s*, he glanced eagerly.

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The formation of the Pluperfect and True Pluperfect participles of the following verbs is irregular :—

	Pluperfect Participle.	True Pluperfect Participle.
यि *yi*, come.	आयोव् *āyōv.*	आयाव् *āyāv.*
ज़ि *zi*, be born.	ज़ायोव् *zāyōv.*	ज़ायाव् *zāyāv.*
नेर *nĕr*, go forth.	द्रायोव् *drāyōv.*	द्रायाव् *drāyāv.*
अच़ *ats*, enter.	च़ायोव् *tsāyōv.*	च़ायाव् *tsāyāv.*
प्रस *pras*, be born.	प्यायोव् *pyāyōv.*	प्यायाव् *pyāyāv.*
पि *pi*, fall.	प्ययोव् *pĕyōv.*	प्ययाव् *pĕyāv.*
गछ़ *gatsh*, go.	गयोव् *gayōv.*	गयाव् *gayāv.*

It will be seen that these Pluperfect Participles (in the sense of the Aorist) are really Aorist Participles of the second conjugation. The feminine, and masculine plural forms, will be found in the list of irregular Aorist Participles (pp. 62 and ff.).

When pronominal suffixes are added to this tense, a final व् *v* or य् *y* is elided, as in the case of the aorist (p. 66). Thus, आयाव् *āyāv* + अस् *as*, आयास् *āyā-s*, he came to him. आयाय् *āyāy* + अस् *as*, आयास् *āyā-s*, they came to him. Other examples of these suffixes are आयास् *āyā-s* + अस् *as*, आयासस् *āyā-s-as*, I came to him; आयाख् *āyā-kh* + अस् *as*, आयाहस् *āyā-h-as*, thou camest to him; आयाव *āyā-w*ᵃ + अस् *as*, आयावस् *āyā-wa-s*, you came to him (viii. iii. 41).

When अय् *ay*, the suffix of the dative of the second person singular is added; आव् *āv* becomes ओ *ō*, and आय् *āy*, आ॑ *ạ̄* (42). Thus, ओय् *ōy* (आव् *āv* + अय् *ay*), he came for thee; आ॑य् *ạ̄y*, they came for thee; द्रोय् *drōy*, he came out for thee; द्रा॑य् *drạ̄y*, they came out for thee; चोय् *tsōy*, he entered for thee; च़ा॑य् *tsạ̄y*, they entered for thee. So वुफियोय् *wuphiyōy*, he flew for thee (वुफियाव् *wuphiyāv* + अय् *ay*).

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7. Perfect Tense.

This tense is not described by Īçvara-kaula. It is formed by conjugating the Adjectival Past Participle with the Present tense of the Auxiliary Verb. As in the case of the other past tenses, the construction is passive in verbs of the first conjugation, and active in verbs of the second and third. The pronominal suffixes are added as in the past tenses. They are added to the Auxiliary Verb, and not to the Participle. In the first conjugation they are suffixes of the agent case, and in the other two of the nominative case. As in the case of the Past tense, there are *a*, *b*, and *c* forms,—*i.e.*, we may omit the suffixes at pleasure, except in the second person. Thus,—

(*a*). त॑मि क॑रु॒म॑तु॒ छुह् *tạm*^{i} *kạr*^{u}*mạt*^{u} *chuh*, by him has been made,—

(*b*). त॑मि क॑रु॒म॑तु॒ छुन् *tạm*^{i} *kạr*^{u}*mạt*^{u} *chu-n*, by him has been made-by-him,—

(*c*). क॑रु॒म॑तु॒ छुन् *kạr*^{u}*mạt*^{u} *chu-n*, has been made-by-him,—

all meaning 'he has made.'

In the second person, only the *b* and *c* forms are used. Thus,—

(*b*). त्वह्य क॑रु॒म॑तु॒ छुव *tŏhĕ kạr*^{u}*mạt*^{u} *chu-w*^{a}, by you has been made-by-you.

(*c*). क॑रु॒म॑तु॒ छुव *kạr*^{u}*mạt*^{u} *chu-w*^{a}, has been made by you, both meaning 'you made.' We cannot say त्वह्य क॑रु॒म॑तु॒ छुह् *tŏhĕ kạr*^{u}*mạt*^{u} *chuh*. In the paradigms, I shall only give the *c*. forms.

The Auxiliary Verb may either precede or follow the Participle. Thus, क॑रु॒म॑तु॒ छुम् *kạr*^{u}*mạt*^{u} *chu-m* or छुम् क॑रु॒म॑तु॒ *chu-m kạr*^{u}*mạt*^{u}, but it is considered more elegant for it to precede, when in a sentence, and not standing by itself. Thus, म्य छुम् गर क॑रु॒म॑तु॒ *mĕ chu-m gar*^{a} *kạr*^{u}*mạt*^{u}, I have built a house. When standing by itself, the Auxiliary Verb usually follows.

The following is the conjugation of this tense. Regarding the formation of the Adjective Past Participle, and its declension, see p. 29.

A. First Conjugation.

(*a*). Transitive verb, (*c*. Forms only).

'I have made,' *Lit.* 'he, she, it, etc., has (have) been made by me.'

	Singular.		Plural.	
	Masculine. क॑रु॒म॑तु॒ *kạrᵘmạtᵘ*.	Feminine. क॑रु॒म॑च़ू *kạrᵘ̄mạts̱ᵘ̄*.	Masculine. क॑रि॒म॑ति *kạrⁱmạtⁱ*.	Feminine. कर्यमच़ *karĕmats̱ᵃ*.
Sing.				
1	क॑रु॒म॑तु॒ छुम् *kạrᵘmạtᵘ chu-m*,	क॑रु॒म॑च़ू छ्यम् *kạrᵘ̄mạts̱ᵘ̄ chĕ-m*	क॑रि॒म॑ति छिम् *kạrⁱmạtⁱ chi-m*.	कर्यमच़ छ्यम् *karĕmats̱ᵃ chĕ-m*.
2	क॑रु॒म॑तु॒ छुथ् *kạrᵘmạtᵘ chu-th*.	क॑रु॒म॑च़ू छ्यथ् *kạrᵘ̄mạts̱ᵘ̄ chĕ-th*.	क॑रि॒म॑ति छिथ् *kạrⁱmạtⁱ chi-th*.	कर्यमच़ छ्यथ् *karĕmats̱ᵃ chĕ-th*.
3	क॑रु॒म॑तु॒ छुन् *kạrᵘmạtᵘ chu-n*.	क॑रु॒म॑च़ू छ्यन् *kạrᵘ̄mạts̱ᵘ̄ chĕ-n*.	क॑रि॒म॑ति छिन् *kạrⁱmạtⁱ chi-n*.	कर्यमच़ छ्यन् *karĕmats̱ᵃ chĕ-n*.
Plur.				
1	क॑रु॒म॑तु॒ छुह् *kạrᵘmạtᵘ chuh*.	क॑रु॒म॑च़ू छ्यह् *kạrᵘ̄mạts̱ᵘ̄ chĕh*.	क॑रि॒म॑ति छिह् *kạrⁱmạtⁱ chih*.	कर्यमच़ छ्यह् *karĕmats̱ᵃ chĕh*.
2	क॑रु॒म॑तु॒ छुव *kạrᵘmạtᵘ chu-wᵃ*.	क॑रु॒म॑च़ू छ्यव *kạrᵘ̄mạts̱ᵘ chĕ-wᵃ*.	क॑रि॒म॑ति छिव *kạrⁱmạtⁱ chi-wᵃ*.	कर्यमच़ छ्यव *karĕmats̱ᵃ chĕ-wᵃ*.
3	क॑रु॒म॑तु॒ छुख् *kạrᵘmạtᵘ chu-kh*.	क॑रु॒म॑च़ू छ्यख् *kạrᵘ̄mạts̱ᵘ̄ chĕ-kh*.	क॑रि॒म॑ति छिख् *kạrⁱmạtⁱ chi-kh*.	कर्यमच़ छ्यख् *karĕmats̱ᵃ chĕ-kh*.

(*b*). Impersonal verb, (*c*. Forms only).

'I have laughed,' *lit.*, 'it has been laughed by me.'

Sing. 1. अ॑सु॒म॑तु॒ छुम् *ạsᵘmạtᵘ chu-m*, I have laughed.
2. अ॑सु॒म॑तु॒ छुथ् *ạsᵘmạtᵘ chu-th*, thou hast laughed.
3. अ॑सु॒म॑तु॒ छुन् *ạsᵘmạtᵘ chu-n*, he has laughed.

Plur. 1. अ॑सु॒म॑तु॒ छुह् *ạsᵘmạtᵘ chuh*, we have laughed.
2. अ॑सु॒म॑तु॒ छुव *ạsᵘmạtᵘ chu-wᵘ*, you have laughed.
3. अ॑सु॒म॑तु॒ छुख् *ạsᵘmạtᵘ chu-kh*, they have laughed.

Pronominal Suffixes.

When the grammatical subject (*i.e.*, the logical object) is a pronoun, it is frequently added in the shape of another pronominal suffix (nominative form). The following are the masculine forms used. Feminine forms can be easily made on the same principle:—

क॑रु॒म॑तु॒ छुथस् *kạrᵘmạtᵘ chu-th-as*, have been made-by thee-I, thou hast made me.

So क॑रू॒म॑चू॒ छ्यथस् *kạrᵘmat̲s̲ᵘ chĕ-th-as*, thou hast made me (fem.).

क॑रि॒म॑ति॒ छिथ् *kạrⁱmạtⁱ chi-th*, thou hast made us (masc.). There is no suffix for the first person plural.

क॑रु॒म॑तु॒ छुनस् *kạrᵘmạtᵘ chu-n-as*, he has made me.

क॑रु॒म॑तु॒ छुवस् *kạrᵘmạtᵘ chu-w-as*, you have made me.

क॑रु॒म॑तु॒ छुहस् *kạrᵘmạtᵘ chu-h-as*, they have made me.

क॑रु॒म॑तु॒ } *kạrᵘmạtᵘ* { छुमख् *chu-m-akh*, I have made thee.
छुनख् *chu-n-akh*, he has made thee.
छुख् *chu-kh*, we have made thee.
छुहख् *chu-h-akh*, they have made thee.

When the logical object is the third person, the forms of the first and third persons are not used in this way. This applies also to the plural. We thus have only the two following forms:—

क॑रु॒म॑तु॒ } *kạrᵘmạtᵘ*, { छुथन् *chu-th-an*, thou hast made him.
छुवन् *chu-w-an*, you have made him.

For 'I have made him,' we must use the full pronoun; thus, सुह् छुम् क॑रु॒म॑तु॒ *suh chu-m kạrᵘmạtᵘ*, and so for the others.

क॑रिम॑ति } *kạr*^{i}*mạt*^{i}, { छिमव *chi-m-aw*^{a}, I have made you.
छिनव *chi-n-aw*^{a}, he has made you.
छिहव *chi-h-aw*^{a}, they have made you.

क॑रिम॑ति } *kạr*^{i}*mạt*^{i}, { छिथख् *chi-th-akh*, thou hast made them.
छिवख् *chi-w-akh*, you have made them.

B. Second Conjugation.

Neuter verb. (*c.* forms only).

I have become, &c.

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	ब्व॑वु॒म॑तु॒ छुस् *bǫ̆v*^{u}*mạt*^{u} *chu-s.*	ब्व॑वू॒म॑च़ू॒ छ्यस् *bǫ̆v*^{ū}*mạts*^{ū} *chĕ-s.*	ब्व॑विम॑ति छिह् *bǫ̆v*^{i}*mạt*^{i} *chih.*	ब्व॒व्यमच़ छ्यह् *bŏvĕmats*^{a} *chĕh.*
2	ब्व॑वु॒म॑तु॒ छुख् *bǫ̆v*^{u}*mạt*^{u} *chu-kh.*	ब्व॑वू॒म॑च़ू॒ छ्यख् *bǫ̆v*^{ū}*mạts*^{ū} *chĕ-kh.*	ब्व॑विम॑ति छिव *bǫ̆v*^{i}*mạt*^{i} *chi-w*^{a}.	ब्व॒व्यमच़ छ्यव *bŏvĕmats*^{a} *chĕ-w*^{a}.
3	ब्व॑वु॒म॑तु॒ छुह् *bǫ̆v*^{u}*mạt*^{u} *chuh.*	ब्व॑वू॒म॑च़ू॒ छ्यह् *bǫ̆v*^{ū}*mạts*^{ū} *chĕh.*	ब्व॑विम॑ति छिह् *bǫ̆v*^{i}*mạt*^{i} *chih.*	ब्व॒व्यमच़ छ्यह् *bŏvĕmats*^{a} *chĕh.*

C. Third Conjugation.

Neuter verb. (*c.* forms only).

I have flown, &c.

	Singular.		Plural.	
	Masculine.	Feminine.	Masculine.	Feminine.
1	वुफ्योम॑तु॒ छुस् *wuphyōmạt*^{u} *chu-s.*	वुफ्येम॑च़ू॒ छ्यस् *wuphyēmạts*^{ū} *chĕ-s.*	वुफ्येम॑ति छिह *wuphyēmạt*^{i} *chih.*	वुफ्येमच़ छ्यह् *wuphyēmats*^{a} *chĕh.*
2	वुफ्योम॑तु॒ छुख् *wuphyōmạt*^{u} *chu-kh.*	वुफ्येम॑च़ू॒ छ्यख् *wuphyĕmạts*^{ū} *chĕ-kh.*	वुफ्येम॑ति छिव *wuphyēmạt*^{i} *chi-w*^{a}.	वुफ्येमच़ छ्यव *wuphyēmats*^{a} *chĕ-w*^{a}.
3	वुफ्योम॑तु॒ छुह् *wuphyōmạt*^{u} *chuh.*	वुफ्येम॑च़ू॒ छ्यह् *wuphyēmạts*^{ū} *chĕh.*	वुफ्येम॑ति छिह् *wuphyēmạt*^{i} *chih.*	वुफ्येमच़ छ्यह् *wuphyēmạts*^{a} *chĕh.*

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8. The Periphrastic Pluperfect Tense.

This tense, also, is not mentioned by Īçvara-kaula. It is formed exactly like the perfect, except that the past tense of the auxiliary verb is used instead of the present. It is unnecessary to give full paradigms, the following examples will suffice.

क॑रु॒म॑तु॒ ओसुम् *kạrᵘmạtᵘ ōsu-m*, I had made (him).

क॑रू॒म॑चू॒ आ॑सू॒म् *kạrᵘmạts̱ᵘ ạ̄sᵘ-m*, I had made (her).

क॑रि॒म॑ति॒ आ॑सिम् *kạrⁱmạtⁱ ạ̄si-m*, I had made (them, masc.).

कर्यमत्त आसम् *karĕmats̱ᵘ āsa-m*, I had made (them, fem.).

ब्रु॑वु॒म॑तु॒ ओसुस् *bọ̆vᵘmạtᵘ ōsu-s*, I had become.

वुफ्योम॑तु॒ ओसुस् *wuphyōmạtᵘ ōsu-s*, I had flown.

Or, with double pronominal suffix.

क॑रु॒म॑तु॒ ओसु॒थस् *kạrᵘmạtᵘ ōsᵘ-th-as*, thou hadst made me.

B. Imperative Mood.

1 (*a*). The Present Tense.

The terminations are (viii. ii. 5).

Singular.	Plural.
2 ह् *h*.	2 इव् *iv*.
3 इन् *in*.	3 इन् *in*.

If the root ends in a consonant, the ह् *h* of the 2nd singular is elided (6). Thus,—

कर् *kar*, make thou. करिव् *kariv*, make ye.

करिन् *karin*, let him make. करिन् *karin*, let them make.

From दि *di*, give, which does not end in a consonant, we get for 2nd singular दिह् *dih*, not दि *di*.

If the root of the verb contains the letter ओ *ō*, that ओ *ō* becomes ऊ *ū*, in the Imperative (7). Thus,—

रोज़ *rōz*, stand, 3rd Sing. Imperat. रूज़िन् *rūzin*.

तोल *tōl*, weigh, „ „ तूलिन् *tūlin*.

पोठ *poṭh*, be fat, „ „ पूठिन् *pūṭhin*.

So also, if the root contains ए *ē*, it becomes ई *ī* (7). Thus,—

नेर *nēr*, go forth, नीरिन् *nīrin*.

शेंक *çē̆k*, fear, शींकिन् *çīkin*.

पेड *pēḍ*, exude, पीडिन् *pīḍin*.

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These changes, however, do not occur in the second person singular (8). Thus, we have, रोज़् *rōz*, तोल् *tōl*, पोठ् *pōṭh*, नेर् *nēr*, शॅक् *çĕk*, पेड़् *pēḍ*.

We thus find the Present Imperative of रोज़ *rōz*, remain, to be conjugated as follows.

	SINGULAR.	PLURAL.
1	रोज़् *rōz*.	रूज़िव् *rūziv*.
2	रूज़िन् *rūzin*.	रूज़िन् *rūzin*.

Every root ending in a vowel, takes the letter य *y* before all terminations, except that of the second person singular (10). Moreover a final इ *i* of the root is changed to य *ya*(*ĕ*), except in the case of the verbs नि *ni*, take, दि *di*, give, and यि *yi*, come (11). We thus get the following conjugation of a verb whose root ends in a vowel.

(*a*) खि *khi*, eat.

	SINGULAR.	PLURAL.
2	ख्यह् *khĕh*.	ख्ययिव् *khĕyiv*.
3	ख्ययिन् *khĕyin*.	ख्ययिन् *khĕyin*.

(*b*) दि *di*, give.

	SINGULAR.	PLURAL.
2	दिह् *dih*.	दियिव् *diyiv*.
3	दियिन् *diyin*.	दियिन् *diyin*.

The root यि *yi*, come, is further irregular, in that, besides being conjugated like दि *di*, it also optionally takes the following form (viii. ii. 12).

	SINGULAR.	PLURAL.
2	व्वल *wŏl*ᵃ (not व्वल् *wŏl*).	व्वलिव् *wŏliv*.
3	व्वलिन् *wŏlin*.	व्वलिन् *wŏlin*.

The root व्वव *bŏv*, become, has the following forms (14).

	SINGULAR.	PLURAL.
2	व्वव् *bŏv*.	व्वविव् *bŏviv*.
3	व्वविन् *bŏvin*, व्वयिन् *bŏyin*.	व्वविन् *bŏvin* or व्वयिन् *bŏyin*.

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The verbs (see pp. 16, 22, 37 and 49).

च़र *tsar*, be inwardly wrathful.

फ़श *phŏç*, be inwardly wrathful.

फुह *phuh*, be inwardly wrathful.

मर्च़ *marts*, be inwardly wrathful.

वुच़ *wuts*, be burnt.

फिच़ *phits*, forget.

त्यंब *tyamb*, look eagerly.

All of which are impersonal, and are only used in the third person singular, to which the appropriate pronominal suffixes of the dative are added. (viii. ii. 9).

Thus,—

च़ॖरिनय् *tsạrⁱn-ay*, let there be inward anger to thee, *i.e.*, be thou angry.

च़ॖरिनव *tsạrⁱn-awᵃ*, be ye angry.

च़ॖरिनस् *tsạrⁱn-as*, let him be angry.

च़ॖरिनख् *tsạrⁱn-akh*, let them be angry.

Regarding the vowel changes, see the following rule.

When a pronominal suffix is added to the Imperative third person singular or plural, the इ *i* of the imperative becomes *i-mātrā*, and the preceding vowel is modified. Thus,

करिन् *karin*, let him make.

कॖरिनम् *kạrⁱn-am*, let him make for me.

The second person is,—

Sing. करुम् *karu-m*, make thou for me.

Plur. कर्यूम् *karyū-m*, make ye for me.

When a pronominal suffix is added to the second person singular of the imperative of a root ending in a consonant, the letter उ *u* is inserted (16). Thus, करुन् *karu-n*, make him or it (a very common form); करुम् *karu-m*, make for me; करुस् *karu-s*, make for him; करुख् *karu-kh*, make for them.

As regards roots ending in a vowel, from खि *khi*, eat, we have ख्यम् *khĕ-m*, &c. From नि *ni*, take, दि *di*, give, and यि *yi*, come, we have दिम् *di-m*, give thou to me, &c.

When a pronominal suffix is added to the second plural imperative of any verb, इव् *iv*, becomes यू *yū* (17). Thus, कर्यूम् *karyū-m*, make ye for me; कर्यूस *karyū-s*, make ye for him; कर्यूख् *karyū-kh*, make ye for them. So from खि *khi*, eat, ख्यायूम् *khyayū-m*, &c., and from नि *ni*, दि *di*, and यि *yi*, दियूम् *diyū-m*, &c.

1 (*b*). The Modified Present Imperative.

This, though not a respectful imperative, is more polite than the simple tense. It is formed by inserting the particle त *ta*. It expresses encouragement, like the Hindī करो तो *karō tō!* It also expresses permission; thus, 'very well, if you wish to do it, do it.' The terminations are as follows (viii. ii. 14).

	Singular.	Plural.
2	त *t°*.	इतव् *ʿtav*.
3	इतन् *ʿtan*.	इतन् *ʿtan*.

The terminations are all added to the root direct (15). The ʿ being *i-mātrā*, a preceding vowel is modified in the 2nd plural, and 3rd sing. and plur. Thus,

	Singular.	Plural.
2	कर्त *kart°*.	कॅरितव् *kaʳʿtav*.
3	कॅरितन् *kaʳʿtan*.	कॅरितन् *kaʳʿtan*.

So also from खार *khār*, mount, खाॅरितन् *khāʳʿtan*; from वाल *wāl*, bring down, वाॅलितन् *wālʿtan*; from रोज़ *rōz*, remain, 2nd sing. रोज़्त *rōzt°*, 3rd sing. रूज़ितन् *rūzʿtan*; from नेर *nēr*, go forth, नेर्त *nērt°*, नीॅरितन् *nīrʿtan*; and from त्सर *tsar*, be inwardly wrathful, &c., त्सॅरितनय् *tsaʳʿtanay*, &c., (see p. 82).

Regarding roots ending in vowels we have from खि *khi*, eat.

	Singular.	Plural.
2	ख्यत *khĕt°*.	ख्यॅयितव् *khĕyʿtav*.
3	ख्यॅयितन् *khĕyʿtan*.	ख्यॅयितन् *khĕyʿtan*.

For नि *ni*, take, दि *di*, give, and यि *yi*, come, we have, however, the following forms.

	Singular.	Plural.
2	दित *dit°*.	दियितव् *diy'tav*.
3	दियितन् *diy'tan*.	दियितन् *diy'tan*.

The pronominal suffixes are added regularly, except that in the second plural, अव् *av* becomes ओ *ō* (18). Thus, कर्‍यितोम् *kar'tō-m*, make ye for me; कर्‍यितोन् *kar'tō-n*, make ye him; कर्‍यितोस् *kar'tō-s*, make ye for him; कर्‍यितोख् *kar'tō-kh*, make ye for them.

2. The Future Imperative.

This is formed by adding ज़ि *'zi* if the root ends in a consonant, and ज़ि *zi* if it ends in a vowel. Before ज़ि *'zi*, a preceding vowel is modified (viii. ii. 22, 24). This tense does not change for number or person. It means 'you, or he, should do a thing at some future time,' or 'make a practice of doing it.' Thus

च्यु कर्‍यिज़ि *ts°h kar'zi*, thou shouldest do.
त्वुचि कर्‍यिज़ि *tṭ̌h' kar'zi*, you should do.
सुय् कर्‍यिज़ि *suh kar'zi*, he should do.
तिम् कर्‍यिज़ि *tim kar'zi*, they should do.

So also from खार *khar*, mount, खार्‍यिज़ि *khār'zi*; from वाल *wāl*, bring down, वाल्‍यिज़ि *wāl'zi*; from रोज़ *rōz*, stand, रूज़िज़ि *rūz'zi*; and from नेर *nēr*, go forth, नीर्‍यिज़ि *nīr'zi*. I cannot find that this form is used with impersonal verbs like च्यर *ts'ar* etc., mentioned when dealing with the Simple Imperative.

As regards verbs ending in a vowel, we have from खि *khi*, eat, ख़ज़ि *khĕzi*; so also in other cases, but from नि *ni*, take, दि *di*, give, and यि *yi*, come, we have दिज़ि *dizi*, etc.

When the pronominal suffixes अम् *am* and अस् *as* are used with this form, ज़ि *zi* becomes ज्य *zya*. (viii. ii. 25).

Thus कर्‍यिज्यम् *kar'zy-am*, you should make me, or for me.

So कर्‍यिज्यस् *kar'zy-as*, you should make for him.

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In other cases, the ज़ि *zi*, is unchanged.

Thus क॑रिज़िय् *kạrⁱzi-y*, he should make for thee.

[NOTE. My Paṇḍit also says क॑रिज़्यन् *kạrⁱzy-an*, not क॑रिज़िन् *kạrⁱzin*; so also he says क॑रिज़्यव *kạrⁱzy-awᵃ*, and क॑रिज़्यख् *kạrⁱzy-akh*].

3. THE PAST IMPERATIVE.

This is formed by adding हे *hē* for all persons and numbers to the Future Imperative (viii. ii. 23). It means 'you should have made so and so,' implying that he had not done it.

Thus क॑रिज़िहे *kạrⁱzihē*, thou shouldst, you, he, or they, should have made.

Pronominal suffixes are added regularly (25). Thus क॑रिज़िहेम् *kạrⁱzihē-m*, you should have made for me.

C. Benedictive Mood.

1. FUTURE TENSE.

This tense expresses a wish. It is formed from the Pluperfect Indicative, by substituting the following terminations (viii. ii. 26).

	SINGULAR.	PLURAL.
2	यख् *yakh.*	इव् *iv.*
3	यन् *yan.*	यन् *yan.*

The tense expresses a wish. Thus, लश्यन् *laçyan*, may he live long. The following is a specimen of the conjugation of the tense of the verb कर *kar*, make; Pluperfect कर्यान् *karyā-n* he made..

'Mayst thou make, &c.'

	SINGULAR.	PLURAL.
2	कर्यख् *karyakh.*	करिव *kariv.*
3	कर्यन् *karyan.*	कर्यन् *karyan.*

So from रन *ran*, cook; 3rd sing. Plup. रञ़ान् *rañā-n*; 3rd sing. Bened. रञ़्यन् *rañyan*. Similarly ज़ेञ़्यन् *zēñyan*, may he conquer.

Roots ending in स *s* change the final स *s* to श *ç*. Thus, from लस् *las*, live long; 3rd sing. plup. ला॑छाव् *lạ̄tshāv*; but 3rd sing. Bened. लश्यन् *laçyan*. So also, from आस *ās*, be, आश्यन् *āçyan*.

The verb छाव *chāv*, use, has for its second singular Bened. either छावयख् *chāvyakh* or छाय्यख् *chāyyakh*. The latter form is peculiar to the second person singular (27).

The verb ब्वव *bŏv*, be, become, changes its final व *v* to य *y* throughout. Thus, ब्वय्यन् *bŏyyan* (not ब्वव्यन् *bŏvyan*), may it be; म ब्वय्यन् *m° bŏyyan*, may it not be, God forbid! (26).

Pronominal suffixes are added in the usual way. Thus, लय्यनय् *laçyan-ay*, may he live for thee! पोय्यनय् *pōṣyan-ay*, may he be victorious for thee!

This tense only occurs in the above verbs (26).

D. Conditional Mood.

1. Present Future Tense.

This is the same as Future Indicative. An example of its use is ब्वय गछ सुद् वुछन् *bŏ-y gaṭsh°, suh wucha-n*. If I go, I shall see him. ब्वय् *bŏy* is contracted from ब्वह् *bŏh*, I, and अय् *ay*, if. The object is mentioned twice. First fully in सुद् *suh*, and again as a pronominal suffix (न् *n*).

2. The Past Conditional Tense.

This tense is used if things are spoken of that might have, but have not, happened. Thus, रूद् अय् पयिहे खद् सपज़िहे *rūd ay pĕyihē, sŏch sapazihē*, if there had been rain, there would have been plenty. It is conjugated as follows (viii. ii. 32).

	Singular.	Plural.
1	करहा़ *karahā́*, (if) I had made.	करहा़व् *karahā́v*.
2	करहा़ख् *karahā́kh*,	कर्[i]हीव् *kar[i]hīv*.
3	करिहे *karihē*,	करहा़न् *karahā́n*.

Notes. (1) When the last syllable contains the vowel आ *ā*, that vowel is always modified. This is not mentioned by Içvara-kaula, but is a fact.

(2) The short *i* in the second person plural is *i-mātrā*, and modifies the preceding root vowel when possible.

Verbs ending in vowels are declined as follows, inserting म् *m* in the first person, as in the Future Indicative.

	Singular.	Plural.
1	ख्यमहा *khyamahā̤*, (if) I had eaten.	ख्यमहाव् *khyamahā̤v.*
2	ख्यहाख् *khyahā̤kh.*	ख्यॅयिहीव् *khĕy^{i}hīv.*
3	ख्ययिहे *khĕyihē.*	ख्यहान् *khyahā̤n.*

From नि *ni*, take, दि *di*, give, and यि *yi*, come, we have as follows.

	Singular.	Plural.
1	दिमहा *dimahā̤.*	दिमहाव् *dimahā̤v.*
2	दिहाख् *dihā̤kh.*	दियिहीव् *diy^{i}hīv.*
3	दियिहे *diyihē.*	दिहान् *dihā̤n.*

Pronominal suffixes are added as follows :—

Added to 1st person.	करहाम् *karahā̤-m*, (if) I or we had made myself or for myself.		
	करहाय् *karahā̤-y*,	,,	thee, or for thee.
	करहाव *karahā̤-w^{a}*,	,,	you, or for you.
	करहान् *karahā̤-n*,	,,	him.
	करहास् *karahā̤-s*,	,,	for him.
	करहाख् *karahā̤-kh*,	,,	them, or for them.
Added to 2nd person singular.	करहाम् *karahā̤-m*, (if) thou hadst made me, or for me.		
	करहान् *karahā̤-n*,	,,	him.
	करहास् *karahā̤-s*,	,,	for him.
	करहाख् *karahā̤-kh*,	,,	them, or for them.
Added to 2nd person plural.	कॅरिह्यूम् *kạr^{i}hyū-m*, (if) you had made me or for me.		
	कॅरिह्यून् *kạr^{i}hyū-n*,	,,	him.
	कॅरिह्यूस् *kạr^{i}hyū-s*,	,,	for him.
	कॅरिह्यूख् *kạr^{i}hyū-kh*,	,,	them, or for them.
Added to 3rd person singular.	करिहेम् *karihē-m*, (if) he had made me or for me.		
	करिहीय् *karihī-y*,	,,	thee, or for thee.
	करिहेव *karihē-w^{a}*,	,,	you, or for you.
	करिहेस् *karihē-s*,	,,	him, or for him.
	करिहेख् *karihē-kh*	,,	them, or for them.

Added to 3rd person plural.

करथानम्	*karahạ̄n-am*,	if they had made	me or for me.
करथानय्	*karahạ̄n-ay*,	,,	thee or for thee.
करथानव	*karahạ̄n-aw*^{a},	,,	you or for you.
करथानस्	*karahạ̄n-as*,	,,	him or for him.
करथानख्	*karahạ̄n-akh*,	,,	them or for them.

Note.—All the forms added to the second person are irregular; and also the suffix of the second person singular, when added to the verb in the third person singular.

The feminine impersonal verbs a त्सर *tsar*, be inwardly angry, etc., (see pp. 16, 22, 37, 49, 54, 68 and 82) are conjugated as follows:—

त्सरिहेम् *tsarihē-m*, (if) there had been inward anger to me; (if) I had been inwardly angry.

असे त्सरिहे *asĕ tsarihē*, (if) we had been inwardly angry.

त्सरिहीय् *tsarihī-y*, if thou hadst been ,, ,,

त्सरिहेव *tsarihē-w*^{a}, if you had been ,, ,,

त्सरिहेस् *tsarihē-s*, if he had been ,, ,,

त्सरिहेख् *tsarihē-kh*, if they had been ,, ,,

This tense may also be used in expressions like the following:—

सुय् करिहे *su-y karihē*, even he did it. That is to say, 'why did you do it? It was his business, and he has done it already.' (35).

APPENDIX.

List of Kāçmīrī Verbs arranged according to Conjugations and Final Letters.

As the forms taken by a Kāçmīrī Verb depend partly on the Conjugation to which it belongs, and partly on the final letter of its root, the following list of Verbal Roots is arranged under Conjugations, and then alphabetically according to the final letter of each root.

For the meaning of these roots, and the form of the Past and Aorist Tenses of each, the reader is referred to the List of Kāçmīrī Verbs given *ante*, Vol. LXV, Pt. I, pp. 314 and ff.

First Conjugation.

khi, ci, di, ni, hi.

khisk, chak, chik, ṭak, ṭuk, ṭ^{a}k, ṭhāk, ṭhuk, ḍak, truk, thyak, thŏk, drŏk, phak, phuk, phŭk, phrak, bak, brak, çĕk, çrŏk, suk, hyak.

jakh, lakh, likh, lēkh.

tsyaŋg, zāg, ṭāg, dag, phāg, būg, maŋg, raŋg, laŋg, lāg, wuŋg, wŏlaŋg, hag.

khar^{a}c.

khāch, tach, buch, bēch, much, rach, wuch, hyachh.

māj.

tsarts, nats, phits, marts, wāṭs, wuts.

yitsh, kātsh, pritsh, britsh.

arz, kanz, khṇnz, graz, nyawāz, pāz, pūz, prinz, baz, buz, bōz, māz, waz, sōz.

kapaṭ, kāṭ. khaṭ, chāṭ, tsaṭ, tsūṭ, tsēṭ, tshaṭ, ḍāṭ, piṭ, prāṭ, raṭ, lūṭ, waṭ, wāṭ.

wuṭh.

kaḍ, gaṇḍ, tshaṇḍ, tshāḍ, tsāḍ, tāḍ, maṇḍ, māḍ, laḍ, s^{a}ḍ, hyaḍ.

priṇ.

kat, khut, nyat, çrut, s^{a}t.

math.

ārad, gind, gund, pad, pŏnd, maud, lad, wad, wand, vyand, sād.

an, ātshan, ān (=an), k^{a}n, khan, chān, tsān, tsēn, tshun, zān, zēn, ṭ^{a}san, dōn, d^{a}n, pachān, parzan, pilan, putsan, prazan, phān, mān, mun, mēn, ran, lŏn, lōn, wakhan, wan, vyatshan, wōn.

krp, khap, gup, chap, tsāp, zap, ṭap, ṭyap, tap, trap, thip, dap, nap.

chŏmb, tsŏmb, tōmb, trömb, lab.

kham, cum, dam, lam, wām, hum.

kāy, dŏy, d^{a}y, pay, lāy, wāy.

alar, ōpar, āwar, katar, kar, kār, kūr, khār, gar, gār, gēr, gōr, cār, cir, char, chēr, chōr, jar, jūr, tsar (be inwardly wrathful), *tsār, tsūr, zar, tār, tōvar, thur, darr, dār, par, pār, pyatar, pūr, pair, phir, phukār, phyār, bagār, bar, maṭhār, mar* (unite), *mahār, mār, mutsar, musar, mūtr, mūr, yār, yēr, rāwar, latār, lār, lūr, wathar, war, wahār, wār, witsār, wŏkhar, wŏthar, wŏphar, wur, wusar, wōr, çēr, sandar, sandār, sar, sār, sŏr, hahar, hār, hōr.*

aṇz^{a}r, aṃb^{a}r, āz^{a}r, āṭ^{a}r, āḍ^{a}r, kaṇz^{a}r, khaṇḍ^{a}r, gaṇz^{a}r, grāç^{a}r, chak^{a}r, chind^{a}r, chŏñ^{a}r, chŏp^{a}r, tsīñ^{a}r, tsŏk^{a}r, tsyaṭ^{a}r, tshyaṭ^{a}r, tshyav^{a}r, tshŏṭ^{a}r, ziṭh^{a}r, zuv^{a}r, zōv^{a}r, z^{a}jar, ḍakh^{a}r, taṭs^{a}r, tañ^{a}r, tīz^{a}r, trŏp^{a}r, thaz^{a}r, dāñ^{a}r, dŏb^{a}r, dūntsh^{a}r, nañ^{a}r, nāç^{a}r, nik^{a}r, nŏm^{a}r, nŏw^{a}r, nōm^{a}r, paj^{a}r, paz^{a}r, paṭh^{a}r, pāṣ^{a}r, pīṭh^{a}r, puç^{a}r, pūṭh^{a}r, phaṣ^{a}r, phāṣ^{a}r, phuṭ^{a}r. baḍ^{a}r, baṇz^{a}r, bal^{a}r, bāg^{a}r, bāj^{a}r, bĕñ^{a}r, braṃ^{a}r, maṇz^{a}r, maṣ^{a}r, mŏṭ^{a}r, mŏṇḍ^{a}r, mūntsh^{a}r, yaṭ^{a}r, raṭsh^{a}r, waḍ^{a}r, vĕz^{a}r, vĕñ^{a}r, vyaṭh^{a}r, vyaḍ^{a}r, vyap^{a}r, vyav^{a}r, wōw^{a}r, çūb^{a}r, sañ^{a}r, saṇz^{a}r, sĕz^{a}r, sŏmb^{a}r, haṭ^{a}r, hŏkh^{a}r, hŏb^{a}r, hŏm^{a}r.

ahal, khōl, gāl, chal, tsāl, tsyakhal, tsyall, tshal, zāl, z^{a}l, ṭāl, ḍāl, tal, tāl, tul, tōl, thal, dal, nyaŋgal, pal, pāl, bōl, mal, lŏl, wal, wāl, wŏlal, sambāl.

āyav, ārav, ālav, ḳamav, kŏkav, kʰʦav, gilav, gyav, gulav, chŏkav, zʰrav, ṭŏkav, ḍakhav, ḍulav, tav, trŏmbav, thav, dabav, dav, dŏgav, dʰnav, nēchav, pākav, pyav, pīnav, pōrav, phālav, phĕʦav, phirav, manav, milav, mŏlav, mōrav, ranzav, rinzav, rʰkav, latav, lalav, lithav, lyav, wazav, wanav, wav, vyav, wŏhav, sagav, sŏkhav, surav, sulav, hʰsav.

abasāv, arpāv, alarāv, āparāv, āwarāv, kapaṭāv, kamanāv, krāv, khŏkhalāv, guzarāv, catāv, cāv, cukāv, chāv, ʦŏgʰnāv, ṭhagāv, ḍulanāv, tāv, tōvarāv, trakarāv, tragʰnāv, trāv, thāv, dāv, dŏgʰnāv, dŏdarāv, dʰṣrāv, nahāv, nāv, nyāv pachatāv, paṭāv, parkhāv, parzanāv, pāv, pilanāv, prazanāv, prāv, pharkāv, baḍāv, bạrʰkāv, bāv, mardāv, milanāv, muʦarāv, musarāv, mūtrāv, ranzanāv, rāwarāv, laṭāv, laḍāv, watharāv, wahārāv, wŏkharāv, wuḍāv, wŏtharāv, wusarāv, çạgʰnāv, saganāv, satāv, sandarāv, sāv, sŏkhanāv, hāv, hʰsanāv.

ạdʰrāv, ạnzʰrāv, ạbʰrāv, ạ̄ḍʰrāv, kạnzʰrāv, khạṇḍʰrāv, gạnzʰrāv, grạ̄çʰrāv, chạkʰrāv, chạʦʰrāv, chivʰrāv, chŏṇʰrāv, chŏpʰrāv, ʦīñʰrāv, ʦŏkʰrāv, ʦŏmʰrāv, ʦhyạṭʰrāv, ʦhyạvʰrāv, ʦhŏṭʰrāv, zīṭhʰrāv, zuvʰrāv, zōvʰrāv, ḍạkhʰrāv, ṭạʦʰrāv, ṭạñʰrāv, tīzʰrāv, trạʦʰrāv, trạsʰrāv, trŏçʰrāv, thạzʰrāv, dạdʰrāv, dạ̄ñʰrāv, dŏbʰrāv, dūnʦhʰrāv, drŏgʰrāv, dʰṣrāv, nạñʰrāv, nạṭʰrāv, nạ̄çʰrāv nīkʰrāv, nŏmʰrāv, nŏvʰrāv, nōmʰrāv, pạjʰrāv, pạzʰrāv, pạthʰrāv, pạ̄sʰrāv, piṭʰrāv, pīthʰrāv, puçʰrāv, pūṭhʰrāv, phạ̄sʰrāv, phuṭʰrāv, bạcʰrāv, bạḍʰrāv, bạdʰrāv, bạnzʰrāv, bạlʰrāv, bạ̄gʰrāv, bājʰrāv, bĕñʰrāv, brạmʰrāv, mạʦʰrāv, mạnzʰrāv, mạsʰrāv, mạ̄ñʰrāv, mŏṭʰrāv, mŏṇḍʰrāv, mŏdʰrāv, mūnʦhʰrāv, yạtʰrāv, rạʦhʰrāv, lyạdʰrāv, lūkʰrāv, wạdʰrāv, vĕzʰrāv, vĕñʰrāv, vyạthʰrāv, vyạdʰrāv, vyạpʰrāv, vyạvʰrāv, wukʰrāv, wugʰrāv, wōwʰrāv, çūbʰrāv, sạñʰrāv, sĕzʰrāv, sĕñʰrāv, sŏgʰrāv, sŏʦʰrāv, srŏgʰrāv, hạṭʰrāv, hạndʰrāv, kạ̄ṭhʰrāv, hŏkhʰrāv hŏʦʰrāv, hŏbʰrāv, hŏmʰrāv.

ʦuv, ṭuv, ḍuv, riv, ruv, liv, siv, suv.

kaç, krēç, paç, phĕç, phuç, phŏç, phēç, braç, çāç, sŏrç.

ḍēṣ, bāṣ, muṣ, waṣ, çaṣ.

abas, as, kas, kās, khʰs, ʦas, zŏs, ṭʰs, ṭhās, das, mus, rʰs, sʰs.

kuh, khah, gʰh, ʦʰh, pih, phuh, muh, sah.

Second Conjugation.

thak, pak.

samakh, hŏkh.

tag, lag, çŏgg.

kʰʦ, khōʦ, paʦ, rōʦ, vyaʦ, hŏʦ.

gaʦh, (be proper).

daz, [*palaz*], *rōz, wŏpaz, sapaz.*

[*palaṭ*], *phaṭ, phuṭ, rōṭ* (also 3rd).

bŏḍ.

wāt.

wŏth.
sapad.
ʦhyann, [*pun*], *sapan.*
wup, *ɕrap.* (Both these also optionally 3rd Conj. in Plup.).
pray, *lay*, *way.*
khar, *tar*, [*prār*], *phar*, *phēr*, [*phōr*], *mar* (die), *sōr.*
gal, *ʦal*, *ḍal*, *ḍōl* (or *ḍŏl*), *phal*, *phŏll*, *mēl.*
bŏv, *rāv.*
[*naɕ*] [*tōṣ*], *dŏṣ*, *pōṣ*, *maṣ*, *rōṣ.*
ās, *khas*, *phas*, *bas*, [*bās*], *las*, *lōs*, *was*, [*wŏbas*].
bĕh.

Third Conjugation.

zi, *pi*, *yi.*
grak, *camak*, *ʦŏk*, *ṭhīk*, *ḍŏk*, *nik*, *lōk*, *wŏk.*
ṭhag, *tayg*, *drŏg*, *sŏg*, *srŏg.*
bach.
mandach.
aʦ, *grŏʦ*, *ʦŏʦ*, *ʦhŏʦ*, *traʦ*, *mŏʦ*, *lĕʦ*, *ɕrōʦ.*
aʦh, *gaʦh*(go).
tēz, *paz*, *bāwaz*, *braz*, *ranz*, *laz*, *wuz.*
kr̥ṭ, *kraṭ*, *gyamaṭ*, *guraṭ*, *ʦhyaṭ*, *ʦhŏṭ*, *ṭŏṭ*, *naṭ*, *paṭ*, *pīṭ*, *prąkh^{a}ṭ*, *mŏṭ*, *rōṭ* (also second), *wŏṭ*, *haṭ.*
kāṭh, *kuṭh*, *krēṭh*, *ʦamaṭh*, *zēṭh*, *ṭyaṭh*, *ṭōṭh*, *drēṭh*, *nāṭh*, *paṭh*, *pōṭh*, *brēṭh*, *mēṭh*, *vyaṭh*, *ɕiṭh*, *ɕriṭh*, *hāṭh.*
aḍ, *pēḍ*, *baḍ*, *buḍ*, *mŏṇḍ*, *r^{a}ḍ*, *lyaḍ*, *wuḍ.*
tūraṇ, *prāṇ*, *r^{a}ṇ*, *wuṣṇ.*
chat, *zōt*, *tat*, *mat*, *r^{a}t*, *lŏt*, *wŏnnat*, *sŏt.*
pāth.
and, *tund*, *thad*, *pyad*, *bād*, *brād*, *wud*, *syad*, *çŏd* (this is a better spelling thăn *çŏddh*).
āman, *kān*, *kyann*, *kr̥han*, *gan*, *guman*, *chan*, *chŏnn*, *ʦhāʦhan*, *tan*, *tīlan*, *nan*, *pākan*, *pran*, *ban*, *basan*, *bākhan*, *byann*, *lahan*, *l^{a}han*, *wŏgan*, *wun*, *ɕig^{a}n*, *san*, *syann*, *hān*, *hāman*, *hōn*, *h^{a}n.*
kąmp, *kup*, *nāp*, *pap*, *paṣp*, *yāp*, *wup* (optionally in Pluperfect), *vyap*, *ɕrap* (optionally in Pluperfect), *hap.*
wuph.
kŏb, *gŏb*, *ṭyamb*, *ḍub*, *tyamb*, *phab*, *ramb*, *lūb*, *çūb.*
garm, *ʦam*, *tham*, *nam*, *bram*, *wŏm*, *çam*, *sam*, *ham.*
biy, *l^{a}y*, *wuy.*
ad^{a}r, *yīr*, *kahar*, *kāʦar*, *kāyar*, *kāw^{a}r*, *kr̥r*, *khŏkhar*, *khōr*, *gīr*, *gōwar*, *cŏkhar*, *ʦar* (increase), *ʦhar*, *ziŋgar*, *zŏŋgar*, *zŏzar*, *ṭhahar*, *ḍar*,

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tṝr, trakar, trōr, thar, thą̄thar, thār, dar, dŏdar, dūr, dōr, nēr, pīr, pōr, phahar, bahar, bā̃bar, bigar, mŏḍᵃr, mōr, lyadᵃr, lōr, vyạdᵃr, vyalar, vyasar, wukar, wudar, wŏbar, sakhar, sā̃gar, syạndᵃr, sīr, sŏsar, hakar, hạndᵃr, har, hᵃr.

al, kal, kumal, kōl, khal, gā̃gal, gēl, grā̃gal, chŏkal, zal, ṭal, ḍyal, tambal, tēl, nīl, pil, piçal, pŏl, prazal, phą̄phal, bal, mamal, mŏkal, wigal, wŏzal, wŏtal, wŏçal, wōl, çahal, hal, hą̄kal, hil, hᵃl.

chiv, tshyav, zuv, nav, srav.

trŏç.

āwas, ḍŏs, tras, pis, pras, ras, lis, vis, wŏlas, wŏs.

gŏh, lᵃh, wuh.

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On Indeclinable Particles in Kāçmīrī.—*By* G. A. Grierson, C.I.E., Ph.D., I.C.S.

[Read January, 1899.]

Içvara-kaula does not formally deal with particles in his grammar, but here and there he refers to them, and the following is a collection of his scattered rules. It in no way pretends to be a complete account of Indeclinables.

Emphatic and indefinite particles have been described by me in Vol. LXVII, Part I, pp. 88, and following.

The following two conjunctions are also there mentioned. They are repeated here for the sake of completeness.

त *t*ᵃ, and (iv. 178). *E.g.*, सुह् त च़्ह *suh tᵃ ts̱ᵃh*, he and thou.

ति *ti*, also (iv. 179). It is also used instead of त *tᵃ* with plurals. Thus, सुह् ति च़्ह ति *suh ti, ts̱ᵃh ti*, he also, you also. महनि्वि ति गुपन् ति आय् *mahanivⁱ ti gupan ti āy*, both the men and the cattle came. In the last sentence we cannot use त *tᵃ*.

The negative particle is न *nᵃ*, not (viii. ii. 19); but ordinarily negative forms of the verb are used, as described under the head of adverbial verbal suffixes. In other words, the न *nᵃ* is usually compounded with the verb as a suffix. Thus, छुस्न *chu-s-nᵃ*, I am not.

The prohibitive particle म *mᵃ* is only used with the Simple Imperative (viii. ii. 19).

म करिन् *mᵃ karin*, let him not make.

म कर् *mᵃ kar*, make thou not.

म करिव् *mᵃ kariv*, make not ye.

With the Modified Imperative मत *matᵃ* is used (20). Thus, मत क॑रितन् *matᵃ kạrⁱtan*, let him not make.

Instead of म *m°* and मत *mat°*, we may use मा *mā* and मता *matā* respectively (20). Thus, मा कर *mā kar*, मता कर्त *matā kart°*.

Other vocative particles may also be added. Thus, मबा कर् *mabā kar*, मसा कर *masą̄ kar*, मतबा कर्त *matabā kart°*, मतसा कर्त *matasą̄ kart°*, and so on (20). See forms of address given in Vol. LXVII, Part I, pp. 92 and ff.

With other tenses of the imperative न *n°* is used (19). Thus, क॑रिज़ि न *kạr¹zi n°*, you should not make. क॑रिज़िहे न *kạr¹zihē n°*, you should not have made.

मा *mā* is used before or after a verb, to indicate a question in hesitation (viii. i. 29). Thus,—

करान् मा छुह् *karān mā chuh*, or मा छुह् करान् *mā chuh karān*, or मा करान् छुह् *mā karān chuh*, is he making? (*I.e.*, see if he is not making it, or if he is making it or not, or perhaps he is not making it?)

कर्यान् मा *karyōn mā*, did he make?

सुह् मा करि *suh mā kari*, will he make?

च्यह् मा कर *čŏh mā kar°*, shall I make?

The particle ताञ् *tāñ*, or ताञत् *tāñat*, is used in asking a question, when the speaker is really in doubt as to whether there is anything to ask (viii. i. 26). Thus,—

क्याह् ताञ् व॑नुन् *kyāh tāñ wạ̄nun*, did he say anything? Here the speaker did not notice at the time what the man said, and afterwards recalls the fact, and, being in doubt, asks the question?

कर् ताञ् याव् *kar tāñ āv*, did he come at any time? If so, when?

कूत् ताञ् द्युतुन् *kūt° tāñ dyutun*, did he give anything? If so, how much?

ताम् *tām*, or तामत् *tāmat*, may be used instead of ताञ् *tāñ*, or ताञत् *tāñat*. Thus, क्याह् ताम् व॑नुन् *kyāh tām wạ̄nun*.

थ॒ *dyath°*. This added to an interrogative word converts it into an intensive one (viii. i. 27). Thus,—

कर् *kar*, or कन *kan°*, when?

यठ कर यान् *dyaṭh° kar āv*, or **यठ कन यान्** *dyaṭh° kan° āv*, he he came a long time ago.

क्यान् *kyāh*, what? **यठ क्यान्** *dyaṭh° kyāh*, a great deal.

कूति *kāṭi*, how many? **यठ कूति** *dyaṭh° kāṭi*, a great many, So **यठ कनि** *dyaṭh° kani*, for a long time.

The usual word for 'if' is **यय्** *ay*, but, with the Past Conditional (viii. ii. 33), **हय्** *hay* may be used instead of **यय्** *ay*, after the verb. Thus,—

करिहे हय् *karihē hay*, if he had made.

करहान् हय् *karahāṇ hay*, if they had made;

करिहेस् हय् *karihē-s hay*, if he had made it.

With the same tense 'if not' is represented by **नय्** *nay* (34). Thus, **करिहे नय्** *karihē nay*, if he had made it; **रूद् नय् प्यिहे** *rūd nay pĕyihē*, if rain had not fallen.

These particles can also be attached to the subject of the verb (35). Thus, **सुहय् करिहे** *suh-ay karihē*, if he had made; **तिम्हय् करहान्** *tim-hay karahāṇ*, if they had made: **सुनय् करिहे** *su-nay karihē*, if he had not made, **बुय् ख्यम्हा** *bŏ-y khyamahā*, if I had eaten.

On the genuineness of the Grant of Çiva-siṁha to Vidyāpati-ṭhakkura.—
By G. A. Grierson, C.I.E., Ph.D., I.C.S.

[Read May, 1899.]

Regarding this grant, which is dated La-saṁ 292 (?), Sana 807, Saṁvata 1455, Çākē 1321, see the *Indian Antiquary*, Vol. XIV, p. 190, and the *Proceedings* of this Society for 1895, Plate iii. The genuineness of this plate has been doubted, but no positive proof for or against the theory has hitherto been put forward.

Dr. Kielhorn's *Inscriptions of Northern India*, No. 578, shows that the last two dates mentioned in it both correspond to Thursday, 10th July A.D., 1399; but that this day would fall in the Bengali San 806, and in the Hijra San 801 (not 807). Unless therefore there has been an error in the calculations of the writer of the deed, neither of these two latter eras can be meant by the word *sana*. There is however another era, also entitled *san*, and which is moreover the era which *in these modern days*, is generally current in the part of Bihār from which the inscription comes. It is the *Faṣlī San*, an era introduced by the Emperor Akbar. For information regarding it, see Prinsep's *Useful Tables*, ed. Thomas, p. 170. The year runs exactly parallel with the *Vikrama Samvat*, the only difference being that, to obtain the *Faṣlī* year, we must subtract 648 from the *Samvat* date. There are no dark and light fortnights in the *Faṣlī* month, the days running through each month from 1 to 30, but with this exception the *Faṣlī* day of the month and weekday are always the same as the *Samvat* ones. It is thus a very easy calculation to convert a *Samvat* to a *Faṣlī* date, and it will be seen that *Faṣlī San* 807 does as a matter of fact correspond to V. S. 1455.

This at once stamps the grant as a very clumsy forgery, for F. S. 807 never existed. The first year of the era, as founded by Akbar, was, not 1, but was 963. No date purporting to be earlier than F. S. 963 is possible. It is therefore evident that the dates in this grant must have been forged by some modern *jyautiṣa*, of whom there are hundreds of half educated ones in Tirhut, who knew the simple equation for converting *Samvat* dates to *Faṣlī* ones, but did not know the history of the *Faṣlī* era. In his anxiety to make the grant look as genuine as possible, he put in all the synchronous dates he knew about, and exposed his forgery in so doing.

Under orders of the Council the following system of transliteration will be adopted for the future in all publications of the Society. Authors of papers for the *Journal*, Pt. I, are particularly requested to adhere to it in their contributions.

A. FOR THE DĒVANĀGARĪ ALPHABET, AND FOR ALL ALPHABETS RELATED TO IT.

अ *a*, आ *ā*, इ *i*, ई *ī*, उ *u*, ऊ *ū*, ऋ *ṛ*, ॠ *ṝ*, ऌ *ḷ*, ए *e*, ऐ *ai*,
ओ *o*, औ *au*, ं *ṁ*, ँ ~ : *ḥ*

क *k*,	ख *kh*,	ग *g*,	घ *gh*,	ङ *ṅ*
च *c*,	छ *ch*,	ज *j*,	झ *jh*,	ञ *ñ*
ट *ṭ*,	ठ *ṭh*,	ड *ḍ*,	ढ *ḍh*,	ण *ṇ*
त *t*,	थ *th*,	द *d*,	ध *dh*,	न *n*
प *p*,	फ *ph*,	ब *b*,	भ *bh*,	म *m*
य *y*,	र *r*,	ल *l*,	व *v*,	(ळ *ḷ*)
श *ç*,	ष *ṣ*,	स *s*,	ह *h*.	

In the above the *virāma* has been omitted for the sake of clearness.

In Modern Vernaculars only; ड़ may be represented by *ṛ*, and ढ़ by *ṛh*.

Avagraha is to be represented by an apostrophe, thus सो ऽपि *sō 'pi*. *Visarga* is represented by *ḥ*, *Jihvāmūlīya* by *ḫ*, and *Upadhmānīya* by *ḭ*. *Anusvāra* is represented by *ṁ*, thus संसर्ग *saṁsarga*, and *anunāsika* by the sign ~ over the letter nasalized, thus अँ *ā*, आँ *ā̃*, and so on. The *udātta* accent is represented by the sign ´ and the *svarita* by ^. Thus, अग्निः *agníḥ*, जनिता *janitá*, क्वा *kvá*, कन्या *kanyā́*. The *anudātta* accent may be represented by ˋ. Thus, ते अवर्धन्त *tḗ àvardhanta*.

B. FOR PERSIAN (INCLUDING ARABIC WORDS IN PERSIAN) AND HINDŪSTĀNĪ.

(*The system is not applicable to Arabic when pronounced as in Arabic-speaking countries*) :—

Vowels.		Consonants.		Sounds only found in Hindūstānī.	
اَ	a	ب	b	بھ	bh
آ	ā	پ	p	پھ	ph
اِ	i	ت	t	تھ	th
اِی	ī			ٹ	ṭ
اے	ē			ٹھ	ṭh
اُ	u	ث	s		
اُو	ū	ج	j	جھ	jh
او	ō	چ	c	چھ	ch

Vowels.		Consonants.		Sounds only found in Hindūstānī.	
اَیَ	ai	ح	ḥ		
اَوَ	au	خ	kh		
		د	d	ڈ	dh
				ڈ̣	ḍ
				ڈ̣ھ	ḍh
		ذ	z		
		ر	r	ڑ	ṛ
				ڑھ	ṛh
		ز	z		
		ژ	zh		
		س	s		
		ش	sh		
		ص	ṣ		
		ض	ẓ		
		ط	ṭ		
		ظ	ẓ		
		ع	‘		
		غ	gh		
		ف	f		
		ق	q		
		ک	k	کھ	kh
		گ	g	گھ	gh
		ل	l		
		م	m		
		ن	n		
		ں	when representing *anunāsika* in Dēva Nāgarī, by ˜ on the preceding vowel		
		و	w (or rarely v)		
		ھ	h		
		ی	y		
		Hamzah	’ (where necessary)		

The ل of the article ال in Arabic words should be assimilated before the solar letters; and the vowel *u* which often precedes the article and absorbs its vowel should remain attached to the word to which it belongs. Thus—اقبال الدولہ Iqbālu-d-daulah.

Tanwīn may be rendered by *n*—e. g., *ittifāqan*. *Alif-i maqṣūrah* should be rendered by *ā*.

Final ہ need not be written in Persian and Hindūstānī words, but should be written in Arabic words.

MEMOIR

ON MAPS ILLUSTRATING

THE ANCIENT GEOGRAPHY

OF

KAŚMĪR.

BY

M. A. STEIN, PH.D.

PRINCIPAL, MADRASAH COLLEGE, CALCUTTA.

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" ... *quae loca fabulosus*
Lambit Hydaspes."

Q. Hor. Flacci, Od. I, xxii.

N.B.—For Table of Contents and List of Abbreviations see pp. 223-231.

JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL.

Part I.—HISTORY, LITERATURE, &c.

Extra-Number 2.—1899.

Memoir on Maps illustrating the Ancient Geography of Kaśmīr.—

By M. A. STEIN, PH.D.

CHAPTER I.

INTRODUCTORY.

Ancient topography in Kaśmīr Chronicle.

1. The maps accompanying this memoir are primarily intended to show the results which a detailed study of Kalhaṇa's RĀJATARAṄGIṆĪ has furnished regarding the early topography of Kaśmīr and the adjacent territories. From the first when engaged in preparing a critical edition of that text,[1] the earliest and most important of the Sanskrit Chronicles of Kaśmīr, I had realized that an exact identification of the very numerous old localities mentioned in it was indispensable for a correct understanding of the narrative. This conviction forced itself even more strongly upon me in the course of the labours I devoted to the preparation of the commentated translation of the work which is now passing through the press.[2]

[1] *Kalhaṇa's Rājataraṅgiṇī* or *Chronicle of the Kings of Kaśmīr*, Bombay Education Society's Press, 1892, pp. xx and 296, 4to.

[2] To be published, with a Historical Introduction, by MESSRS. A. CONSTABLE AND CO., London, in two volumes, 4to.

Many of the questions thus raised were so detailed and intricate that it would have been manifestly impossible to attempt their solution without carefully studying on the spot those topographical facts which alone could elucidate them. It was, therefore, fortunate for my researches in this direction that I was able during successive years to make a series of antiquarian tours in Kaśmīr. These acquainted me not only with the extant ancient remains of the Valley, but also with its actual topography and that of the neighbouring mountain regions.[1] I cannot feel too grateful for the advantage I thus enjoyed. It has allowed me in more than one case to fix with certainty the position of important ancient sites, which no amount of philological acriby would have sufficed to locate correctly.

Preparation of Maps.

2. In order to place before the student of the Kaśmīr Chronicle the results of these researches, as well as the evidence on which they were based, the preparation of maps appeared necessary that would show the modern topography of the country in full detail together with the ancient sites and local names identified. While considering the means for the execution of such maps I received in the autumn of 1896 the generous offer of the Asiatic Society of Bengal to bear the cost connected with their preparation, on the understanding that the maps would be published also in the Society's Journal with a separate explanatory memoir. I accepted this offer all the more readily as it gave me the desired opportunity of treating the subject of the early geography of Kaśmīr in a connected form and before a larger public. For the liberal assistance thus rendered to me, I wish to record here my sincere thanks. I owe special obligations to Dr. G. A. Grierson, C.S., C.I.E., and Dr. A. F. R. Hoernle, C.I.E., whose kind offices were mainly instrumental in securing the above arrangement.

The successful execution of the maps as now published was rendered possible by the ready co-operation of Colonel J. Waterhouse, I.S.C., late Assistant Surveyor General, in charge of the Lithographic and Photographic Office of the Survey of India Department. The preparation of a new ground map to show on a sufficiently large scale the details of the modern topography of Kaśmīr would have cost much trouble and entailed very heavy, almost prohibitory, expense. At the same time it had to be considered that there were no other materials available for such a map but those supplied by the Trigonometrical

[1] The tours referred to occupied the greatest part of my summer vacations in 1888, 1889, 1891, 1892, 1894 and were supplemented by shorter visits to particular sites during the summers of 1895–96.

Survey operations in Kaśmir, 1856–60, which had been embodied on the scale of 4 miles to 1 inch in the corresponding sheets of the 'Atlas of India.'

It hence appeared to me the most convenient plan to use as a ground-map a mechanical reproduction of that portion of the 'Atlas of India' which contains Kaśmīr and the adjacent territories. Over this ground-map the entries relating to the ancient topography of the country could be printed in a distinguishing colour. This plan having received Colonel Waterhouse's approval, the required portions of the engraved plates containing Sheets 27 and 28 of the 'Atlas,' were transferred to the stone and the copies of the larger map reproduced from the latter by lithography. A similar process was used for the smaller map showing the capital, Śrīnagar, and its environs on the enlarged scale of 1 mile to 1 inch. But in this case the original map which was not engraved but only zincographed, had to be retraced on the stone.[1]

In the case of either map the entries marking ancient sites and names were printed in red over the ground-map from a separate stone. In order to distinguish at a glance the old local names in the Rājataraṅgiṇī from those known only to the later Chronicles and other sources, the former were shown in Grotesque type and the latter in *Italic*.

By following the method here briefly explained it was possible to provide maps which exhibit in all needful detail the latest and most authentic survey of Kaśmīr and at the same time show clearly all important features of the old topography. The success of the technical execution is due mainly to the great care and attention bestowed on it by Colonel Waterhouse and his staff. For this as well as much valuable advice accorded to me in connection with the work I may be allowed to offer here my grateful acknowledgments.

Arrangement of memoir.

3. It has already been stated that the maps here presented are in the first place intended to illustrate those data of the ancient geography of Kaśmīr which are contained in Kalhaṇa's Chronicle. But in addition to the old local names and sites taken from this our most important source of information those mentioned in the later Sanskrit Chronicles and other Kaśmirian texts have also been inserted as far as they can claim antiquity and interest. These maps may, therefore, equally well serve to illustrate a comprehensive account of the historical topography of Kaśmīr, such as I shall attempt to give here, up to the close of the Hindu epoch.

[1] The original of this smaller ground-map had appeared as an inset in the "*Map of Jummoo, Kashmir and Adjacent Territories*," 4 miles to 1 inch, published by the Survey of India, 1861.

In treating this subject it appears to me most convenient to examine first the sources of information from which our knowledge regarding the ancient topography of Kaśmīr is drawn. I shall next proceed to notice what we can learn from these sources as to the general physical features of Kaśmīr geography and their bearing on the historical and economical conditions of the country during the Hindu period. In the last chapter I intend to discuss the political divisions of the territory and to indicate briefly the information available to us regarding the particular places of historical or religious interest.

Most of the data upon which this account of the old topography of Kaśmīr is based, are contained in Kalhaṇa's Chronicle, and have therefore already been explained by me in the notes which accompany my translation of that work. In order to avoid unnecessary repetition I shall refer to these notes for all such detailed evidence as could not conveniently be set forth within the limits of the present paper.

Earlier publications.

4. Before, however, closing these preliminary remarks it is necessary to refer briefly to those few publications in which facts bearing on the old topography of Kaśmīr have received an earlier treatment.

In view of what has been said above we naturally turn first to the works which have dealt directly with the interpretation of the Rājataraṅgiṇī. Dr. WILSON who was the first European to study the Chronicle in the original, published an abstract of the contents of the first six Books as early as 1825.[1] He seems to have fully realized the importance of an accurate and sober examination of the geographical questions connected with the narrative. The textual materials at his disposal were, however, extremely defective, and European knowledge of Kaśmīr restricted at the time solely to the accounts of BERNIER and FORSTER. He could hence scarcely do more than indicate the more or less corrupt modern equivalents by which the Persian Chronicles render some of the Kaśmīr local names taken from Kalhaṇa's account. The judgment and accuracy with which Dr. Wilson discussed the Chronicle's notices of countries and places situated outside Kaśmīr and better known at that time, shows sufficiently that only the defective character of the available materials prevented that distinguished Sanskrit scholar from doing justice to the task.

The elaborate commentary with which Mr. TROYER accompanied his French translation of the Rājataraṅgiṇī,[2] does not represent any material advance beyond the contents of Wilson's Essay. Yet Mr. Troyer

[1] *An Essay on the Hindu History of Cashmir*, in *Asiatic Researches*, vol. xv., 1825, pp. 1 *sqq.*

[2] *Rādjataraṅgiṇī ou Histoire des rois du Kachmīr*, Paris, 1840–52.

had already the whole text of the Chronicle to refer to, and in the meantime a considerable amount of information about Kaśmir had become available through the works of travellers like Moorcroft, Jacquemont, Vigne, Von Hügel, and others. The serious shortcomings which characterize Mr. Troyer's labors notwithstanding his patient devotion to the task, have already been fully indicated by Prof. Bühler.[1] Detailed reference to the defects of the topographical notes is hence unnecessary.

The English translation of the Chronicle published in the years 1879-87 by Babu Jogesh Chunder DUTT makes no attempt whatever to elucidate the many points of topographical interest. Though the translation itself is decidedly better than that of Mr. Troyer, yet it necessarily shares the defects arising from the use of the same corrupt text. Both versions strikingly demonstrate the importance of topographical researches by the frequent instances in which the translators have mistaken local names for words of ordinary meaning or *vice versâ*.[2]

The advantages offered for enquiries of this kind by a personal acquaintance with the country were fully illustrated by the valuable contributions which General (then Captain) CUNNINGHAM was able to make to our knowledge of ancient Kaśmīr in connection with his visit to the Valley in November 1847. Though his stay was short and primarily devoted to a survey of the more conspicuous of the temple-ruins still extant, he succeeded in identifying correctly a number of important ancient sites such as *Purāṇādhiṣṭhāṇa* 'the old capital,' *Jyeṣṭheśvara*, *Mārtāṇḍa*, *Padmapura*, *Pattana*, *Khonamuṣa*.[3]

General Cunningham subsequently had occasion to discuss comprehensively these localities in his *Ancient Geography of India*, a work which, notwithstanding its deficiencies in detail, amply testifies to the great antiquarian experience and natural acumen of its author. The chapter on the "Kingdom of Kashmir"[4] utilizes the evidence afforded by the Chinese sources and Alberūnī, and indicates correctly the old names of the petty hill states to the south and south-east of Kaśmīr (*Rājapurī*, *Vallāpura*, *Campā*, *Kāṣṭhavāṭa*). It further adds to the identifications already mentioned equally important notes on *Pravarapura*, the present Śrīnagar, *Vijayeśvara*, *Huṣkapura*, *Juṣkapura*, *Jayapura*. If General Cunningham was less successful in his attempts at

1 *See Report on a tour in search of Sanskrit Manuscripts made in Kashmir*, *J. Bo. B. R. A. S.* 1877, pp. 55 *sqq*.

2 For some of the imaginary territories and places which figure in these translations, see *Vienna Oriental Journal*, 1898, pp. 67 *sqq*.

3 See his *Essay on the Arian Order of Architecture as exhibited in the temples of Kashmir*, *J. A. S. B.*, 1848, pp. 242–327.

4 See *Ancient Geography of India*, 1871, pp. 89–103, 128–141.

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locating *Parihāsapura* and some other ancient sites, this may fairly be attributed to his inability to consult the Sanskrit sources in the original.[1]

Professor LASSEN's "Indische Alterthumskunde" gives an extensive analysis of the historical contents of Kalhaṇa's work.[2] But his explanations as to the ancient localities mentioned are generally only there well-founded where they are based on General Cunningham's researches. Ancient territories and places are often connected with modern localities merely on the ground of a faint resemblance of the names and without sufficient internal evidence. This tendency has frequently led that distinguished scholar to ignore the narrow territorial limits within which most of the local and ethnic names occurring in the later portion of Kalhaṇa's narrative have to be looked for. It is only natural that identifications of real (or imaginary) localities which transferred the scene of contemporary events described by Kalhaṇa to territories so distant as Lahore, Eastern Afghānistān or Ajmīr,[3] have helped to produce a very ill-focussed picture of the political power and extent of the Kaśmīr kingdom in those later times.

The merit of having definitely shown the right methods and means for re-constructing the ancient geography of Kaśmīr belongs to Professor BÜHLER. This great scholar by whose lamented death so many branches of Indian research have suffered irreparable loss, had in the masterly

1 If particular proof were wanted to show that a through acquaintance with the modern topography of a country is in itself not sufficient to lead to useful results in regard to its historical geography, Mr. VIGNE's work, *Travels in Kashmir, Ladak, Iskardo*, (London, 1842, two Vols.) would supply it. This estimable artist and traveller evidently took a great deal of interest in the antiquities of the country which he traversed in many directions. His book, however, as far as the old geography of Kaśmīr is concerned, furnishes scarcely anything more than a series of amusingly naïve etymologies of local names. Thus *Hūrᵊpōr* (S'ūrapura) is "the Diamond City," *Pāndrēṭhan* (Purāṇādhiṣṭhāna) the place of the 'Pandus and Duryndun' (*i. e.*, Duryodhana), Sōpūr (Suyyapura) 'the Golden City,' etc.; see i. p. 267, ii. pp. 37, 157.

Mr. Vigne is responsible for the strange derivation of the name of the Kaśmīr capital, *S'rīnagar* (S'rīnagara), or as he spells it, 'Siri-Nagur,' from "*Surya Nagur*, the city of the sun" (p. ii. 137). Judging from the persistence with which the error has been copied by a succession of modern writers on Kaśmīr, this etymology bids fair to establish itself as a piece of orthodox creed with European visitors to the Valley.

2 See *Indische Alterthumskunde* (second ed.), ii. pp. 885–915; iii. pp. 984–1128.

3 I refer to locations like those of *Lohara* (Lohᵊrin) at Lahore; of the [imaginary] province *Kampanā* in eastern Afghānistān; of the *Lavanya* tribe near the Sambhar salt lake; of the feudal chief *Koṣṭheśvara* at Kōṭgaṛh on the Satlej, etc.; comp. *Ind. Alterth.* iii. pp. 1057, 1041, 1069, 1105, and for the supposed territorial extent of the Kaśmīr state, iii. p. 1119.

report on his Kaśmīr tour lucidly set forth the work that remained to be done in connection with the Rājatarangiṇī.[1] He had there shown that for a full comprehension of its contents a minute study of the ancient geography of Kaśmīr was indispensable. He was the first to call attention to the ample materials which are offered for such a study by the later Sanskrit Chronicles, the Nīlamatapurāṇa and other Kaśmīrian texts. But he also realized that "some of the geographical questions would probably require a final re-examination in Kaśmīr."

Other labors prevented my lamented master from undertaking this task himself. But the most graphic and accurate notices which his Report gives of those sites in the Valley he had himself been able to visit,[2] prove convincingly—if any proof were needed—that no important point connected with the old topography of the country could easily have escaped his attention. The particular identifications first made by Prof. Bühler will be duly mentioned in their proper places. It was a source of true satisfaction to me that I was able during my last year's visit to Europe to present personally the departed with the first clean copies of the maps now published. That the results recorded in them were such as obtained his approval, will always appear to me the highest reward for the labour their preparation and the preceding researches had cost me.

[1] See *Report on a tour in search of Sanskrit manuscripts made in Kashmir*, Bombay, 1877, p. 58.

[2] See *loc. cit.*, pp. 4–18.

CHAPTER II.

ACCOUNTS OF OLD KAS'MĪR.

Section I.—Classical Notices.

5. Our sources for the early geography of Kaśmīr may be conveniently divided into foreign notices and indigenous records. As the information supplied by the former is on the whole earlier in date though by no means more precise or important, we shall commence our review with them. Having learned what little the outer world knew or recorded of the secluded alpine land, we shall appreciate all the more the imposing array of Kaśmīrian authorities which offer themselves as our guides in and about the Valley. With the foreign accounts but in a kind of intermediate position we may class those Indian texts the authors of which may have possessed some more detailed information of Kaśmīr, but have not thought it necessary to vouchsafe it to us.

Alexander's invasion.

It is significant for the isolated position which its mountain barriers assured to Kaśmīr, that we do not find any mention of the country in those accounts to which we are accustomed to look for the first truly historical notices of the North-West of India. I mean the relations of Alexander's invasion. The march from Taxila to the Hydaspes (Jehlam) took the Macedonian forces along a line of route which lay comparatively near to the confines of Kaśmīr. Yet there is no notice in the accounts of Alexander's expedition which can be shown to imply even a hearsay knowledge of the Kaśmīr Valley. On the other hand the names of the neighbouring territories on the West and South have long ago been recognized in the names of their rulers *Arsakes* and

Abisares. These names clearly represent ethnic appellations derived from *Uraśā* (Ptolemy's Οὔαρσα) and *Abhisāra.*[1]

Ptolemy's Kaspeiria.

The only certain reference to Kaśmīr which classical literature has preserved for us, is found in PTOLEMY'S Geography. There can be no doubt that D'Anville was right in recognizing its name in that of the region of Κασπειρία situated 'below the sources of the Bidaspes (Vitastā) and of the Sandabal (Candrabhāgā) and of the Adris (Irāvatī)'.[2] Ptolemy mentions this territory correctly enough between that of the *Daradrai* or Dards on the Indus and *Kylindrine* or the land of the Kulindas on the Hyphasis (Biās) and eastwards. In his subsequent detailed description of Indian territories, however, he makes the region 'held by the Kaspeiræans' extend eastwards from the land of the Pandoouoi on the Bidaspes as far as Mount Ouïndion or the Vindhya.[3]

It is clear that the limits here indicated which would embrace a great portion of the present Panjāb with parts of the North-West Provinces and Central India, can have nothing to do with Kaśmīr. It has been suggested that Ptolemy's statement refers to a period when the power of the dynasty ruling over Kaśmīr actually extended over the wide territories above indicated.[4] The assumption, put into a form more in keeping with historical probability, would be that Kaśmīr was then subject to a great foreign dominion the rulers of which, for one reason or the other, were in Ptolemy's source designated from this part of their realm.

However this may be, it is curious to note that we meet with the name Κάσπειρα also in the long list of cities located within the region belonging to the Kaspeiræans. The geographical position assigned to it by Ptolemy's table (or map) would bring Kaspeira close to the junction of the Hydaspes and Zaradros (Satlej), *i.e.*, the neighbourhood of Multān.[5] Yet it seems difficult to believe that the information originally underlying this entry referred to any other locality but Kaśmīr.[6]

1 See LASSEN, *Ind. Alt.*, ii. p. 174; WILSON, *Essay*, p. 116; also my notes on *Rājatar.* i. 180; v. 217.

2 See Ptolemy VII. i. 42 and pp. 21, 40 *sq.* in *Antiquité Géographique de l'Inde, par M. D'Anville, Premier Géographe du Roi*, etc., Paris, 1775.—The accuracy and sound judgment displayed in this work fully justify the great fame it has enjoyed.

3 Ptolemy, VII. i. 47.

4 Compare, *e.g.*, LASSEN, *Ind. Alt.* ii. p. 898; V. DE ST. MARTIN, *Mémoires de l'Académie des Inscriptions*, Sav. étrang., Ire Série, t. v., p. 380.

5 See the old map reproduced in DR. MCCRINDLE'S *Ancient India as described by Ptolemy*, Bombay, 1885.

6 This had been rightly seen already by D'ANVILLE. He points out, p. 40, that the error in latitude implied by Ptolemy's position of Kaspeira (if Srinagar

It would be useless to attempt to seek now for an explanation of the erroneous location. The researches of the most competent scholars have amply proved how little reliance can be placed on the apparent exactness of Ptolemy's latitudes and longitudes in the Asiatic portion of his work.[1] None of the other city names in the same list can be connected with Kaśmīr. Nor is the identification of any one of them certain, expect that of Μόδουρα ἡ τῶν Θεῶν, the sacred Mathurā. This alone suffices to show how far away from Kaśmīr we are liable to be taken.

The value of Ptolemy's notice of *Kaspeiria* lies mainly in the fact that it presents us with an accurate enough transcription of that form of the country's name which on independent phonetic evidence we must assume as an intermediate stage between the Sanskrit *Kaśmīra* and the modern Kaśmīrī form *Kaśīr*. The explanations given below (§ 36) will show that a well-established phonetic law presupposes a form **Kaśvīra* for the earlier Prakrit stage of Kaśmīrī. Of this form we have in *Kaspeira* (pronounced Kaspīra) as close a rendering as Greek writing permitted.[2]

The Sanskrit form of the name, *Kaśmīra*, has, as far as we can go back, been always the one in official use. By it the country has been, and is still to this day, generally known abroad (Hindī *Kaśmīr*, Persian *Kashmīr*.) The preservation of the popular Prakrit **Kaśvīra* by Ptolemy deserves hence attention with regard to the original source from which this particular item of information was obtained.

Kaspeiroi of Dionysios and Nonnos.

6. It is very probable that we have also to connect with Kaśmīr a curious notice which Stephen of Byzance has preserved from the *Bassarika*, a lost poem of Dionysios of Samos. The passage, first apparently noticed by D'Anville, mentions the Kaspeiroi as a tribe famous among all Indians for their fast feet.[3] We do not know the

is really meant) is not greater than that which can plainly be proved in the case of his entry for *Barbarei*, the port at the mouth of the Indus.

[1] I cannot refrain from quoting here in full the very just remarks of Sir Henry Yule, *Cathay and the Way Thither*, p. cli, which ought ever to be remembered by those who have to deal with Ptolemy on Indian soil. "We see here how Ptolemy's Asiatic Geography was compiled. It is evident that he first drew his maps embodying all information that he had procured, however vague and rough it might be. From these maps he then educed his tables of latitudes and longitudes and his systematic topography. The result is that everything assumes an appearance of exact definition; and indications on the map which meant no more than (somewhere hereabouts is said to be such a country), became translated into a precision fit for an Act of Parliament."

[2] Thus the tribal name *Aspasioi* of Arrian (iv. 23) reproduces the Sanskrit *Aśvaka*; comp. McCrindle, *Invasion of India*, p. 333.

[3] The text of the passage is reproduced by Troyer, ii. p. 307. Another short quotation from the same text mentions the *Ariênoi* along with the Κασπείροι.

time of this Dionysios. Nor is there any indication as to the source from which he may have taken the reference. That the Kaśmīrīs had abroad the reputation of being good pedestrians may be concluded from a remark of Albērūnī.[1] It is clear that the natural conditions of an alpine valley enclosed by difficult mountain ranges are likely to develop the marching powers of its inhabitants. The Rājataraṅgiṇī gives us in fact several instances of very respectable marching performances. It shows at the same time the scant use made of riding animals in the mountains.[2] There is thus more than the mere name to justify us in referring the notice of Dionysios of Samos to Kaśmīr.

We meet with the name of the *Kaspeiroi* also in the Dionysiaka of Nonnos. There they are mentioned among the Indian tribes rising in arms against Bacchos.[3] As Nonnos' list names in the same passage also the Ariênoi whose name we see coupled with that of Kaspeiroi in the fragment of the Bassarika, it is probable that Nonnos has taken his reference either from the latter work or from some common source.

Kaspatyros of Herodotos.

7. We should, indeed, have a far earlier reference to Kaśmīr in classical literature, and one by no less an authority than the 'Father of history,' if the opinion of those scholars could be accepted who have thought to recognize the name of the Valley in the KASPATYROS of Herodotos. The facts are briefly the following. Herodotos mentions the city of Kaspatyros as the place at which the expedition under Scylax of Koryanda, sent by Darius to explore the course of the Indus, embarked.[4] He distinctly places this city in the Paktyan land (Πακτυϊκὴ γῆ). This is described as being to the north of the other Indians and apparently bordering on the Baktrian territory. The place meant by Herodotos is evidently the same that Hekataios knew before him by the name of KASPAPYROS and as a city of the Gandarians.[5]

The notice of Hekataios (circ. 549–486 B.C.) makes it clear that Kaspatyros or Kaspapyros, whichever form may be more accurate, must have been situated in that territory where the Indus first becomes navigable, *i.e.*, in the ancient Gandhāra, the present Peshawar District. That the designation *Paktyikē* used by Herodotus refers to the same

[1] *India*, transl. Sachau, i. p. 206.

[2] Compare *Rājat.* vii. 140, 1301; viii. 192, 379, 1588, 1796, 1887, 2673 *sq.*

[3] See *Dionysiaka*, xxvi. 165 *sqq.* I take this reference from TROYER, ii. p. 308.

[4] See iv. 44, also iii. 102. The points bearing on the interpretation of the passage have been fully discussed by SIR E. H. BUNBURY, *History of Ancient Geography*, i. pp. 228, 256.

[5] See Stephanos Byzant., s.v. ΓΑΝΔΑΡΙΚΗ; also Müller's *Fragmenta historic. graec.*, i. p. 12.

territory and represents the earliest mention of the ethnic name *Pakhtūn* or the modern Indian *Paṭhān*, seems also probable.[1] The exact site of Kaspatyros has not been identified. Considering the great changes which local nomenclature in Gandhāra has undergone, it perhaps never will be.[2]

Wilson was the first who distinctly attempted to connect the name of Kaspatyros with Kaśmīr.[3] But the idea seems to have occurred earlier. For D'Anville thought it necessary to refer to it and to refute it. Wilson saw clearly enough that the city of Scylax must have been situated close to the Indus and hence far away from Kaśmīr. If notwithstanding this important fact he yet proposed to identify its name with that of Kaśmīr, on the assumption that the borders of the latter kingdom extended as far as the Indus, the mistake must be traced to a fanciful etymology of the latter name.

Wilson assumed that the name Kaśmīr was derived from * *Kaśyapapura*, a name which he supposed to have been given to the country owing to its colonization by the Ṛṣi Kaśyapa. He supported this strange derivation by a reference to the uniform assertion of 'Oriental writers.'[4] But it is difficult to believe that he could have meant any

[1] This identification seems to have been first made simultaneously by Dorn and Lassen; compare V. de St. Martin, *E'tude sur la géographie grecque de l'Inde*, Mém. de l'Acad. des Inscriptions, Sav. E'trang., Ire Série, V., p. 17 *sqq.* His note on Kaspatyros, *ib.* pp. 81–86, contains a judicious review of the whole question from the geographical point of view and a detailed account of earlier opinions. For a more recent résumé compare Darmesteter, *Chants Populaires des Afghans*, pp. clxxx *sqq.*

[2] Proper navigation begins now at Jahāngīra, a place situated on the left bank of the Kābul River, some six miles above the confluence of the latter with the Indus at Attock. The lower part of the Kābul River's course lies in a well-defined single bed which, in view of the natural configuration of the banks, cannot have changed materially in historical times. Above Jahāngīra the current becomes too strong for safe navigation.

I doubt very much whether the Indus immediately above Attock can ever have been suitable for proper navigation. The river is cut up there into many, often very shallow, channels and obstructed by continually shifting sandbanks. On the eastern bank spreads the low plain of Chach, which must have always left a wide scope to the vagaries of the great river. Taking into account these circumstances I should not be surprised if Scylax's expedition had chosen some place near Jahāngīra for the start on their voyage. There are many ruined sites near the latter place, and near Alladhēr closeby on the Indus.

[3] See *Essay*, p. 117; for a reproduction of the argument, also, *Ariana Antiqua*, p. 136 *sq.*

[4] "This (the name of Cashmir) was derived, it is uniformly asserted by the Oriental writers, from the colonization of the country by Casyapa, the first settlement or city being named after him Casyapapur, converted in ordinary pronuncia-

better authorities than the Persian Tārīkhs of Kaśmīr, of the 17th and 18th century, which he had occasion to consult in connection with his above-quoted Essay. They, indeed, indulge in whimsical etymologies like Kashmīr, *i.e.*, *Kashap* (Kaśyapa) + *mar* (maṭha), etc. But neither these etymologies nor the name **Kaśyapapura* are in any way known to our genuine sources.

Wilson would scarcely have chosen to put forth such a derivation, had the whole of the Chronicle or the other Kaśmirian texts been at the time accessible to him. Extensive as this literature is, it does not furnish any evidence whatever for *Kaśyapapura or a similar name having ever been used as a designation of the country. This fact is all the more significant as allusions to the legendary origin of the country are otherwise so frequent. The philological impossibility of deriving Kaśmīra from *Kaśyapapura need scarcely be specially indicated at the present day.[1] A reference to the theory was, however, here necessary, as it has found its way into works of authorities like Ritter, Lassen and Humboldt, and has hence been reproduced even by recent writers.[2]

Section II.—Chinese Records.

Earliest Chinese notice.

8. If classical literature has thus nothing to tell us of Kaśmīr but the bare name, it is very different with the Chinese records. Buddhist pilgrims from China on their way to the sacred sites of the Indian plains visited Kaśmīr and chose it as a resting place. Their itineraries as well as the records of the political relations established with Kaśmīr during a period of Chinese extension to the west, furnish us with a series of interesting data for the old geography of Kaśmīr.

It seems difficult to ascertain from the materials at present accessible in translations or notices of European scholars, which is to be considered the earliest Chinese reference to Kaśmīr. The difficulty is connected with the use of the geographical term *Ki-pin*. This name

tion into Cashappur or Caspapur, the latter of which forms is the proper reading of the Greek text;" *Essay*, p. 117.

[1] It is curious to note that Kāśyapapura was, according to an Indian authority quoted by Albērūnī, *India*, transl. Sachau, i. p. 298, one of the old names of Multān.

[2] See Ritter, *Erdkunde*, ii. p. 1087; Lassen, *Ind. Alt.*, ii. p. 635 (where for *Kaśyapapura > Kaśmīra an equally unfounded derivation from *Kaśyapamira is substituted); Humboldt, *Asie Centrale*, i. p. 102; for modern works, *e.g.*, McCrindle, *Ancient India*, p. 108; Beal, *Si-yu-ki*, i. p. 148.

originally and properly designated the Upper Kābul Valley.[1] It appears, however, at a period when Chinese knowledge of India was less developed, to have been used in a vague and general fashion for a variety of territories on the northern confines of India, among them also Kaśmīr. However this may be, our loss seems scarcely to be great, as these notices of the Chinese Annalists regarding Ki-pin do not seem to give characteristic local details.[2]

The first clear reference to Kaśmīr which I can trace at present, is contained in a record dating from 541 A.D. It is taken from the account of an Indian envoy who reached China during the early part of the reign of the T'ang dynasty.[3] The name of Kaśmīr is not mentioned. Yet it is evident that M. PAUTHIER who published the extract, was right in referring to Kaśmīr the description given of the northern portion of India as a country "situated at the foot of the snowy mountains and enveloped by them on all sides like a precious jewel. In the south there is a valley which leads up to it and serves as the gate of the kingdom." The points noticed here are exactly those with which we meet in all Chinese accounts of Kaśmīr.

Visit of Hiuen Tsiang.

9. Ninety years after the date of this notice Kaśmīr was visited by HIUEN TSIANG. He reached the Valley from Uraśā in the west and resided in it as an honoured guest for fully two years. The records of the great Chinese pilgrim contain by far the fullest and most accurate description of Kaśmīr that has come down to us from a foreign pen during the period with which we are here concerned.[4]

Hiuen Tsiang must have entered Kaśmīr by the valley of the Vitastā as he describes his route as leading to the south-east of Uraśā, the present Hazāra District. After 'crossing over mountains and treading along precipices' he arrived at the 'stone gate which is the western entrance of the kingdom.' We shall see below that this gate known also to Ou-k'ong and Albērūnī, was the frontier watch-station or *Dvāra* in the gorge of Bārāmūla (Varāhamūla). He passed the first night on Kaśmīr soil at *Huṣkapura*, the modern Uṣkūr, opposite Bārāmūla. Thence he proceeded to the capital which he describes

[1] Compare the explanations of Messrs. Lévi and Chavannes in their paper '*L'Itinéraire d'Ou-k'ong*, Journal asiatique, 1895, vi. pp. 371 *sqq.*, together with the supplementary and modifying statements, *ib.*, 1896, vii. pp. 161 *sq.*

[2] These notices are enumerated by Messrs. Lévi and Chavannes, *Journal asiat.*, 1895, vi. pp. 378 *sq.*

[3] G. PAUTHIER, *Examen méthodique des faits qui concernent le Thian-Tchou ou l'Inde*, Paris, 1839, p. 40.

[4] See *Si-yu-ki*, transl. Beal, i. pp. 148 *sqq.*; *Life of Hiuen Tsiang*, transl. Beal, pp. 68 *sqq.*

exactly in the position of the present Śrīnagar. There he was lodged in the convent known as the *Jayendravihāra* which is named also in the Rājataraṅgiṇī.[1] A two years' stay, though chiefly passed in the study of 'the Sūtras and Śāstras', must have enabled Hiuen Tsiang to acquaint himself thoroughly with the Valley.

His description of the kingdom *Kia-shi-mi-lo* shows clearly that the geographical application of the term Kaśmīr must have been then, exactly as now, restricted to the great basin of the Vitastā and the side valleys drained by its tributaries above the Bārāmūla defile. He notices that the country is enclosed on all sides by mountains which are very high. "Although the mountains have passes through them, these are narrow and contracted." These natural bulwarks protected the country from neighbouring states 'which had never succeeded in subduing it.' Though the climate is cold and the snow plentiful, the soil is fertile and abounds with fruits and flowers. The inhabitants seem to have changed as little as the soil since Hiuen Tsiang's days. It is still easy to recognize in them the people whom he describes as "light and frivolous, and of a weak, pusillanimous disposition. The people are handsome in appearance, but they are given to cunning. They love learning and are well-instructed."

"Since centuries learning had been held in great respect in this kingdom." Hiuen Tsiang dwells with evident pleasure on the recollection of the learned conferences he had with the Kaśmīr doctors of the sacred law.[2] Kaśmīr had in earlier times played a great part in the traditions of the Buddhist church. Hiuen Tsiang relates at length the legends how the Arhat Madhyāntika had first spread the law of Buddha in the land; how in the time of Aśoka the five hundred Arhats had taken up their abode there; and how finally under the great Kaniṣka, king of Gandhāra, Kaśmīr had been the scene of the universal Council which fixed and expounded the Sacred Canon. Yet he observes that in his own time the kingdom as a whole was "not much given to the faith, and that the temples of the heretics were their sole thought."[3]

It is probably owing to this not very flourishing condition of contemporary Buddhism that Hiuen Tsiang mentions only a comparatively small number of Vihāras and Stūpas in the Valley. Among the Stūpas there were four ascribed to Aśoka. Beneath another Kaniṣka was believed to have deposited the canonical texts as fixed by his Council, engraved on sheets of copper. None of these structures have yet been

[1] Compare note iii. 355.
[2] See *Life*, p. 71 *sq.*
[3] See *Si-yu-ki*, i. p. 158.

identified with any certainty. But in their description the pilgrim furnishes us incidentally with a valuable topographical indication.

Speaking of the convent which prided itself on the possession of a miraculous tooth of Buddha, he indicates its site as being about 10 *li* (circ. 2 miles) to the south-east of the new city and to the north of the old city.[1] This proves that the capital of Hiuen Tsiang's time which corresponds to the present Srīnagar, was then a comparatively new foundation, exactly as the Chronicle's account has it. At the same time the reference to the 'old city' enables us to fix with absolute certainty the earlier capital of Srīnagarī at the present *Pāndrēthan*, the *Purāṇādhiṣṭhāna* of Kalhaṇa.[2]

The two full years which Hiuen Tsiang, according to his own statement spent in Kaśmīr,[3] represent a longer halt than any which the pious traveller allowed himself during his sixteen year's wanderings through the whole of India and Central Asia.[4] With all due respect for the spiritual fervour of the pilgrim and the excellence of his Kaśmīrian preceptors, it is difficult to suppress the surmise that the material attractions of the Valley had something to do with his long stay. The cool air of Kaśmīr, the northern aspect of its scenery and products, have at all times exercised their powerful charm over those visitors who themselves born in colder climes have come to the Valley from the heat and dust of the Indian plains. Just as these advantages attract in yearly increasing numbers European visitors from India Proper, so the modern Turkī pilgrims from Kashgar, Yarkand and other parts of Central Asia, whether on the way to Mecca or on their return, never fail to make a long stay in Kaśmīr.

We should undoubtedly find the example of the modern Ḥājīs followed also by Buddhist pilgrims if there were still any from those northern regions to take their way through Kaśmīr to the holy places of India. It would be an interesting task to examine to what extent the fame of Kaśmīr as the 'paradis terrestre des Indes,' is the creation of the Valley's northern visitors, both European and Asiatic. Here it may suffice to add that Hiuen Tsiang before he reached Kaśmīr, must have had already his experience of the torrid heat and the other amenities of a Panjāb summer.[5] We shall also see that the example of the other Chinese pilgrim whom we are able to follow on his visit to Kaśmīr, points exactly to the same conclusion.

1 *Si-yu-ki*, i. p. 158.

2 See below §§ 88, 89.

3 See *Life*, p. 72.

4 Compare the table of dates for Hiuen Tsiang's itinerary, CUNNINGHAM, *Ancient Geography*, pp. 563 *sqq.*

5 See CUNNINGHAM, *Ancient Geography*, p. 563 *sq.*

Hiuen Tsiang's narrative tells us that he left the Valley going in a south-westerly direction. He reached *Pun-nu-tso*, the Parṇotsa of the Chronicle and the modern Prūnts, after crossing mountains and passing precipices.[1] As the Tōṣ°maidān route is the direct and most frequented route to that territory, it is very probable that Hiuen Tsiang also followed it. Parṇotsa as well as Rājapurī (Ho-lo-she-pu-lo) to which the pilgrim subsequently proceeded, had at the time of his visit no independent ruler, but were subject to Kaśmīr.

T'ang Annals.

10. The next Chinese notice of Kaśmīr, and one which is of considerable historical interest, is contained in the Annals of the T'ang dynasty.[2] They inform us that the first embassy from Kaśmīr arrived at the imperial court in or shortly after A.D. 713. In the year 720 *Tchen-t'o-lo-pi-li*, ruler of Kaśmīr, the Candrāpīḍa of the Chronicle, was accorded by imperial decree the title of king.

His brother and successor *Mou-to-pi* in whom Kalhaṇa's Muktāpīḍa or Lalitāditya has long ago been recognised, sent after the first Chinese expedition against *Po-liu* or Baltistān (between 736 and 747) an envoy called *Ou-li-to* to the Chinese court. He was to report the alleged victories of his master over the Tibetans but at the same time also to solicit the establishment of a camp of Chinese troops by the banks of the lake *Mo-ho-to-mo-loung* (the Mahāpadma Nāga or Volur lake). The Kaśmīr king offered to provide all necessary supplies for an auxiliary force of 200,000 men. But the 'Divine Khān' found it more convenient to content himself with issuing decrees for the sumptuous entertainment of the ambassador and for the registration of Muktāpīḍa with the title of king. Since that time the relations of Kaśmīr with the celestial empire and the receipts of tribute from the former are said to have continued without interruption.

The description of Kaśmīr which is coupled with this record of the T'ang Annals, appears to be in the main copied from Hiuen Tsiang's *Si-yu-ki*. But in addition it furnishes us with an exact statement as to the Kaśmīr capital at that time. In my *Notes on Ou-k'ong's Account of*

[1] *Si-yu-ki*, i. p. 162 *Life* p. 72.

[2] The notice was first made known by A. Rémusat's translation of the corresponding extract in Matuanlin's encyclopædia; see *Nouveaux Mélanges asiatiques*, Paris, 1829, i. pp. 196 *sqq*. An abstract of the same notice, but from the original text of the Annals, where the names are more correctly rendered, will be found in Messrs. Lévi and Chavannes' *L'Itinéraire d'Ou-k'ong*, *Journal asiat.*, 1895, vi. pp. 354 *sqq*.

From Reinaud, *Mémoire sur l'Inde*, pp. 189 *sq*. it would appear that the names of Kaśmīr kings in this Chinese record and that of the Mahāpadma lake were first correctly identified by Klaproth, *Mémoires relatifs à l'Asie*, ii. pp. 275 *sq*. This work is at present not accessible to me.

Kaśmīr[1] I have shown that the *Po-lo-ou-lo-po-lo* of the Annals is a correct reproduction of *Pravarapura*, the old and official name of Śrīnagara. In the same way the name *Mi-na-si-to* given to the great river which flows to the west of the capital, represents a correct enough transcription of *Vitastā*. Both the names are recorded in the form which they bore in the official Sanskit, and are, therefore, evidently taken from the information given by the Kaśmīr envoys.

Ou-k'ong.

11. Not many years after Muktāpīḍa's embassy Kaśmīr was visited by another Chinese pilgrim, Ou-k'ong. Though greatly inferior to Hiuen Tsiang in learning and power of observation, he has yet left us information regarding the country which is of interest and value. The itinerary of Ou-k'ong the discovery and recent publication of which we owe to Messrs. Lévi and Chavannes,[2] contains the reminiscences of forty years' wanderings, taken down after the pilgrim's return to China and in a form regrettably brief. But whether it be due to Ou-k'ong's long stay in Kaśmīr or to other causes, his account is fortunately far more detailed in the case of Kaśmīr than in that of any other territory visited by him. His description of the Valley and the several sites mentioned by him have been fully discussed by me in the separate paper already quoted.[3] I need hence indicate here only the main results of this analysis.

Ou-k'ong reached Kaśmīr in the year 759 from Gandhāra, presumably by the same route as Hiuen Tsiang had followed. He took there the final vows of a Buddhist monk and spent there fully four years engaged, as his itinerary tells us, in pilgrimages to holy sites and in the study of Sanskrit.[4] Though he is said to have studied from daybreak till night-fall, his diligence does not seem to have brought him much literary culture. This is curiously shown by the popular Apabhraṁśa forms in which our pilgrim records the names of the monasteries he specially singles out for notice. Four of these I have been able to identify with Vihāras mentioned in the Chronicle,[5] and two of them have left their names to villages which survive to the present day.

1 See pp. 26 *sqq.* in the above-quoted paper, published in the "Proceedings" of the Imperial Academy, Vienna (Philos.-histor. Class), 1896, vol. cxxxv.

2 See *L' Itinéraire d'Ou-k'ong*, Journal asiat., 1895, vi. pp. 341 *sqq.*

3 See *Notes on Ou-k'ong's account of Kaśmīr, loc. cit.*

4 See *L' Itinéraire d'Ou-k'ong*, p. 356.

5 Thus the monastery of *Ngo-mi-t'o-p'o-wan* (**Amitabhavana*) corresponds to the *Amṛtabhavana* Vihāra of Rājat. iii. 9, which has given its name to the present *Antobavan* near Śrīnagar. The 'monastère du mont *Ki-tché*, (**Kicā* < Skr. *kṛtyā*) is no other than the *Kṛtyāśrama Vihāra*, at the modern village *Kiṭṭahōm*, the legend of which is related at length by Kalhaṇa, i. 131 *sqq.* The Vihāra of the great king *Moung-ti* (*Mutti) was one of Muktāpīḍa's foundations, probably the *Mukta-

While Hiuen Tsiang mentions only about one hundred convents in the country, Ou-k'ong found more than three hundred and speaks in addition of the number of Stūpas and sacred images as considerable. We may conclude from this that there had been a rise in the popularity of Buddhism in the century intervening between the visits of the two pilgrims.

Ou-k'ong describes the kingdom of Kaśmīr correctly enough as enclosed on all sides by mountains which form its natural ramparts. Only three roads have been opened through them, and these again are secured by gates. In the east a road leads to *T'ou-fan* or Tibet; in the north there is a road which reaches into *Poliu* or Baltistān; the road which starts from 'the western gate' goes to *K'ien-t'o-lo* or Gandhāra.[1]

We have here a clear enough description of the great routes through the mountains which since ancient times have formed the main lines of communication between the Valley and the outer world. The road to *T'ou-fan* corresponds undoubtedly to the present route over the *Zoji-Lā* to Ladākh and hence to Tibet. The road to *Po-liu* is represented by the present "Gilgit Road," leading into the Upper Kiṣangaṅgā Valley and thence to Skardo or Astōr on the Indus. The third road can be no other than the route which leaves the Valley by the gorge of Bārāmūla and follows the Vitastā in its course to the west. We have seen already that Hiuen Tsiang followed it when he entered Kaśmīr by 'the stone gate, the western entrance of the kingdom.' There can be doubt that in the gates (*fermetures*) closing these roads we have a reference to the ancient frontier watch-stations of which we find so frequent mention in our Kaśmīrian records.

Besides these three roads Ou-k'ong knew yet a fourth. "This, however, is always closed and opens only when an imperial army honours it with a visit." It is probable that this curious notice must be referred to one of the roads leading over the Pīr Panṭsāl range to the south. Owing possibly to political causes these routes may have been closed to ordinary traffic at the time of Ou-k'ong's visit.[2]

The political relations between China and the northern kingdoms of India seem to have ceased soon after the time of Ou-k'ong. This was probably due to the Chinese power under the later T'ang gradually losing ground in Central Asia before the Uigurs and the Tibetans. The

vihāra at Huṣkapura: Uṣkūr, iv. 188. In the 'monastère du général (*tsiang-kiun*)' it is easy to recognize the Vihāra of the Turk (Tuḥkhāra) *Caṅkuṇa* who was one of Muktāpīḍa's ministers. He is reported to have founded two monasteries called after his own name (iv. 211, 215).

1 See *L' Itinéraire d'Ou-k'ong*, p. 356.

2 See *Notes on Ou-k'ong*, p. 24 sq.

pilgrimages, however, of Chinese Buddhists to India continued during the next two centuries, and of one at least of these pilgrim parties it is recorded that it took the route through Kaśmīr.[1] But no detailed account bearing on Kaśmīr has yet come to light of these later pilgrimages.

Section III.—Muhammadan notices.

Kaśmīr closed to Arab geographers.

12. After the Greeks and the Chinese the early Muhammadan writers are our next foreign informants regarding the historical geography of India. If with one very remarkable exception they have nothing to tell us of Kaśmīr topography, the explanation is not far to seek. The first rush of Arab invasion in the Indus Valley during the eighth century had carried the Muhammadan arms at times close enough to the confines of Kaśmīr.[2] No permanent conquest, however, had been effected even in the plains of the Northern Panjāb. Protected in the West by the unbroken resistance of the Śāhis of Kābul and in the South by a belt of war-like Hindu hill-states, Kaśmīr had never been seriously threatened. Even when Islām at last after a long struggle victoriously over-spread the whole of Northern India, Kaśmīr behind its mountain ramparts remained safe for centuries longer.

Conquest and trade were the factors which brought so large a part of the ancient world within the ken of the early Muhammadan travellers and geographers. Both failed them equally in the case of Kaśmīr. For a classical witness shows us that a system of seclusion,—ever easy to maintain in a country so well guarded by nature as Kaśmīr,—hermetically sealed at that time the Valley to all foreigners without exception.

Even the well-informed Al-Mas'ūdī who had personally visited the Indus Valley, is unable to tell us more about Kaśmīr than that it is a kingdom with many towns and villages enclosed by very high and inaccessible mountains, through which leads a single passage closed by a gate.[3] The notices we find in the works of Al-Qazwīnī and Al-Idrīsī are practically restricted to the same brief statement. The references in other geographical works are even more succinct and vague.[4]

1 Compare Yule, *Cathay*, p. lxxi., and Julien, *Journal asiat.*, 1847, p. 43.

2 See Reinaud, *Mémoire sur l'Inde*, pp. 195 *sq.*; Alberūnī, *India*, i. p. 21.

3 See *Al-Mas'ūdī's* "Meadows of Gold," transl. Sprenger, i. p. 382.

4 The silence of the early Muhammadan geographers as regards Kaśmīr was duly noticed by Ritter, *Asia*, ii. p. 1115.—For Al-Qazwīnī, see Gildemeister, *De rebus Indicis*, p 210; for Al-Idrīsī, Elliot, *History of India*, i. pp. 90. *sq.*

For the notices of other Arab geographers, see *Bibliotheca geographorum*

Albērūnī's interest in Kaśmīr.

13. Notwithstanding the circumstances above indicated, Arabic literature furnishes us with a very accurate and valuable account of old Kaśmīr. We owe it to the research and critical penetration of ALBĒRŪNĪ of whom indeed it might be said as of an early British explorer of Afghānistān,[1] that he could look through the mountains. The great Muhammadan scholar had evidently utilized every opportunity during his long stay at Ghazna and in the Panjāb, (A.D. 1017–30) for collecting information on Kaśmīr.

His interest in the distant alpine valley is easily understood. He, himself, tells us in the first chapter of his great work on India, how Hindu sciences when the victories of Maḥmūd had made the Hindus 'like atoms of dust scattered in all directions,' had retired far away from the conquered parts of the country. They "fled to places which our hand cannot yet reach, to Kaśmīr, Benares and other places."[2] In another passage he speaks again of Benares and Kaśmīr as the high schools of Hindu sciences.[3] He repeatedly refers to Kaśmīrian authors, and from the notices shown below it is evident that among his informants, if not among his actual teachers, there were Kaśmīrian scholars.[4]

The curious fact that Albērūnī himself composed some Sanskrit treatises for circulation among 'the people of Kaśmīr,'[5] proves beyond all

arabicorum, ed. De Goeje, i. p. 4; ii. pp. 9, 445; v. p. 364; vi. pp. 5, 18, 68; vii. pp. 89, 687; also *Abū-l-Fidā*, ed. Reinaud, pp. 361, 506.

[1] Mountstuart Elphinstone.

[2] ALBĒRŪNĪ's *India*, transl. Sachau, i. p. 22.

[3] *India*, i. p. 173.

[4] Albērunī, ii. 181, refers particularly to Kaśmīrian informants with whom he conversed regarding the miracle of the '*Kūdaiṣhahr*,' *i.e.*, the *Kapaṭeśvara* Tīrtha (see below § 112). The way in which the pilgrimage to this spot was described to Albērūnī, makes it quite certain that his informants were personally familiar with the Tīrtha. The same must be said of his note on the pilgrimage to the temple of Śāradā (i. 117; see below § 127). The details regarding a local Kaśmīr festival (ii. p. 178), the anecdote about the propagation of the *Śiṣyahitāvṛtti* in Kaśmīr (i. 135), are such as could not well have reached Albērūnī otherwise but by verbal communication.

Writing himself in A.D. 1030 he refers to a statement contained in the almanac for the Śaka year 951 (A.D. 1029–30) 'which had came from Kashmīr' (i. p. 391). He could scarcely have secured such an almanac except through Kaśmīrian Paṇḍits who even at the present day, wherever they may be, make it a point to provide themselves from home with their local *nakṣatrapattrikā*.

For references to Kaśmīrian authors or texts specially connected with Kaśmīr, see i. pp. 126, 157, 298, 334, i. p. 54 (Viṣṇudharma), etc. Compare also the very detailed account of the calendar reckoning current in Kaśmīr and the conterminous territories, ii. p. 8.

[5] See *India*, Prof. Sachau's preface, p. xxiv., and the introduction to his edition of the text, p. xx.

doubt the existence of special relations between the great *Mleccha* scholar and that jealously guarded country. These relations seem strange considering what Albērūnī himself tells us so graphically about the rigid isolation of Kaśmīr. We can scarcely explain them otherwise than by personal intercourse with Kaśmīrian Pandits.

In view of these indications we can hardly go wrong in attributing a great portion of Albērūnī's detailed knowledge of Kaśmīr topography to these learned informants. But we also know that the chances of war had given him an opportunity of supplementing this knowledge in part by personal observation. Albērūnī refers in two places to his personal acquaintance with the fortress *Lauhūr* (or Lahūr) on the confines of Kaśmīr. In an extract from my commentary on the Rājataraṅgiṇī already published,[1] I have proved that Albērūnī's Lauhūr is identical with the castle of *Lohara*, so frequently mentioned in the Chronicle. Its position is marked by the present Loh°rin on the southern slope of the Pīr Pantsāl range.

'Loharakoṭṭa' is undoubtedly the same as the Fort of Lōh-kōt which according to the uniform report of the Muhammadan historians brought Maḥmūd's attempt at an invasion of Kaśmīr to a standstill. It is hence certain that Albērūnī had accompanied this unsuccessful expedition. It probably took place in A.D. 1021. Though it failed to reach Kaśmīr, it must have given Albērūnī ample opportunity to collect local information and to acquaint himself with the topography of those mountain regions which formed Kaśmīr's strongest bulwark to the south. The result is yet clearly traceable in the accuracy with which he describes the relative position of the most prominent points of this territory.

Is it too much to suppose that Albērūnī had at one time or the other Kaśmīrian Paṇḍits in his employ? We know that in preparing the vast materials digested in his book he worked largely with the help of indigenous scholars. Judging from his own description of the state of Hindu sciences in the conquered territories and the bitter enmity prevailing there against the dominant Mlecchas, it is doubtful whether he could have secured there such assistance as he required.

Albērūnī himself, when describing the difficulties in the way of his Indian studies, tells us (i. p. 24): "I do not spare either trouble or money in collecting Sanskrit books from places where I supposed they were likely to be found, and in procuring for myself, even from very remote places, Hindu scholars who understand them and are able to teach me."

Kaśmīr has always been distinguished by an over-production of learning. Its Paṇḍits have been as ready in old days as at present to leave their homes for distant places wherever their learning secured for them a livelihood (compare BÜHLER, Introd. to the *Vikramāṅkadevacarita*, p. xvii; also *Indische Palæographie*, p. 56).

[1] See my note on the '*Castle of Lohara*,' *Indian Antiquary*, 1897, pp. 225 *sqq.*, or Note *E*, on Rājat. iv. 177, §§ 12, 13.

Albērūnī's account of Kaśmīr.

14. Albērūnī's main account of Kaśmīr is contained in Chapter xviii. which gives 'various notes on the countries of the Hindus, their rivers and their ocean.'[1] Compared with the description of the rest of India, it is disproportionately detailed. Albērūnī first sketches in broad but correct outlines the political division of the mountain region which lies between the great Central Asian watershed and the Panjāb plain. He then refers to the pedestrian habits of the Kaśmīrians and notes the use by the nobles of palankins carried on the shoulders of men, a custom fully illustrated by the Chronicle and accounted for by the nature of the communications in the mountains.[2]

What follows deserves full quotation. "They are particularly anxious about the natural strength of their country, and therefore take always much care to keep a strong hold upon the entrances and roads leading into it. In consequence it is very difficult to have any commerce with them. In former times they used to allow one or two foreigners to enter their country, particularly Jews, but at present they do not allow any Hindu whom they do not know personally to enter, much less other people."

We have here a full and clear statement of that system of guarding all frontier-passes which we have found alluded to already in the Chinese records. It explains the great part which is played in the Kaśmīr Chronicles by the frontier watch-stations, the *Dvāras* and *Draṅgas*. It is of all the more interest as the last traces of the system, in the form of *rāhdārī*, have disappeared in Kaśmīr only within quite recent memory.[3]

Albērūnī then proceeds to describe the 'best known entrance to Kashmīr.' Though the starting point of his itinerary cannot be identified with absolute certainty, it is clear that he means the route which ascends the Jehlam Valley. From "the town *Babrahān*, half way between the rivers Sindh (Indus) and Jailam, 8 farsakh are counted to the bridge over the river where the water of the *Kusnārī* is joined by that of the *Mahwī*, both of which come from the mountains of *Shamīlān* and fall into the Jailam." Though there seems to be here some slight confusion, I have little doubt that the point meant by 'the bridge over the river' corresponds to the present Muẓaffarābād, at the confluence

[1] See *India*, i. pp. 206 *sqq*.

[2] Compare e.g. *Rājat.* iv. 407; v. 33, 219; vii. 478; viii. 2298, 2636, 2674, 3165, etc.

The word *katt* which Albērūnī gives as the indigenous term of the palankin, is perhaps a corrupted Apabhraṁśa form of *karṇīratha*, often named in the Rājat.

[3] Compare my *Notes on the Ancient Topography of the Pir Pantsāl Route*, *J. A. S. B.*, 1895, pp. 382 *sqq* ; also below § 40.

of the Jehlam and Kiṣangaṅgā. The easiest route to Kaśmīr from the west leads through the open central portion of Hazāra (Uraśā) to Mansahra; hence across the Kunhār and Kiṣangaṅgā rivers to Muẓaffarābād, and then up by the right side of the Jehlam Valley to Bārāmūla.[1] In *Kusnārī* it is easy to recognize with Prof. Sachau the present Kunhār River which falls into the Jehlam a few miles below its great bend at Muẓaffarābād.[2] The Mahwī is evidently meant to designate the Kiṣangaṅgā.[3] If thus interpreted the only error in Albērūnī's description is that it makes the Kunhār join the Kiṣangangā whereas in reality it falls into the Jehlam after the latter's junction with the Kiṣangaṅgā.

I have shown in my note on Rājat. v. 215 that the route here indicated, which was a favorite one until the modern "Jehlam Valley Tonga Road" was constructed, is distinctly referred to already in Kalhaṇa's account of Saṁkaravarman's march to and from Uraśā. The distance of 8 farsakh corresponds according to Albērūnī's reckoning to about 39 English miles.[4] Referring to the map and the modern route measurements[5] this distance carries us to a point between Mansahra and the next stage Abbottabad, *i.e.*, exactly into the neighbourhood where according to the evidence given in the above-quoted note the old capital of Uraśā must be located. 'Babrahān' which cannot be identified at present, is perhaps intended to represent the name of this old town which could fairly be described as situated midway between the Indus and Jehlam.

From Muẓaffarābād onwards,—where there is still a bridge over the Kiṣangaṅgā just as at the time (1783) when Forster crossed here on his way from Kaśmīr to Attock,[6] and as, if our explanation is right, in the time of Albērūnī,—we can follow the route quite plainly. Albērūnī counts five days of march "to the beginning of the ravine whence the

1 This route is described, *e.g.*, by DREW, *Jummoo*, p. 528, 'as the easiest route from the Panjāb to Kaśmīr.'

2 *Kunhār* represents the regular phonetic derivative of a Skr. **Kuśnārī*, medial *ś* becoming always *h* under a phonetic law common to Kaśmīrī and the related dialects; for the change *hn* > *nh* compare GRIERSON, *Phonology of Indo-Aryan Vernaculars*, *Z. D. M. G.*, 1896, p. 33.

3 I am unable to account for the name *Mahwī*. Could it be the corruption of an Apabhraṁśa derivative of *Madhumatī*? This name, though properly applied to an affluent of the Kiṣangaṅgā, is used in a Māhātmya also for the latter river itself; see Note *B*, Rājat. i. 37, § 16.

4 Compare Prof. Sachau's note, *India*, ii. p. 316. Albērūnī values his *farsakh* at 4 Arabian miles or approximately 4×2186 yards. Hence 1 *farsakh* = $4\frac{1734}{1760}$ English miles.

5 See DREW, *loc. cit.*

6 See G. FORSTER, *Journey from Bengal to England*, 1808, ii. p. 46.

river Jailam comes,' that is, of the gorge through which the river flows immediately below Bārāmūla. This estimate agrees closely with the actual road distance between Muẓaffarābād and Bārāmūla which is given by Drew as 84 miles.[1] At the other or Kaśmīr end of the ravine Albērūnī places quite correctly 'the watch-station *Dvār*' (Skr. *Dvāra*) the position of which, as we shall see below, is marked to this day by the site of the old gate known as *Drang*.

Albērūnī's description of the Valley.

"Thence leaving the ravine you enter the plain, and reach in two more days *Addishṭān*, the capital of Kashmīr, passing on the road the village *Ūshkārā*." All this is perfectly accurate. Adhiṣṭhāna 'the capital' is, of course, meant for Srīnagara[2] and Ūshkārā for *Uṣkūr*, opposite Bārāmūla, the ancient Huṣkapura already mentioned by Hiuen Tsiang.[3] Albērūnī's mention of Uṣkūr which is on the left river bank, shows that then as now the ordinary road from the 'Gate of Varāhamūla' to Srīnagara passed on the left or southern side of the Valley. Two marches are still counted for this part of the journey.

The capital is correctly described as "being built along both banks of the river Jailam which are connected with each other by bridges and ferry boats." It is said to cover 'a space of four *farsakh*.' This if interpreted to mean 'a space of four Farsakh in circumference,' would not be too far from the truth, assuming that all suburban areas around the city are included in the estimate. The course of the river above and below the capital is traced rightly enough as far as the Valley is concerned. "When the Jailam has left the mountains and has flowed two days' journey, it passes through Addishtān. Four Farsakh farther on it enters a swamp of one square Farsakh" Here, of course, the Volur lake (Mahāpadma) is meant. "The people have their plantations on the borders of this swamp, and on such parts of it as they manage to

[1] See *loc. cit.* According to Drew's table six marches are counted, but one of them is very short. On the modern route following the opposite side of the river five marches are now reckoned from Domēl, opposite to Muzaffarābād, to Bārāmūla.

[2] *Adhiṣṭhāna*, used again ii. p. 181, is a term which indicates that Albērūnī's informant was a Sanskrit-speaking person. The common designation of the capital was *Srīnagara* or simply *Nagara*; see § 91 below.

[3] The text as rendered by Prof. Sachau, speaks of "*Ūshkārā* which lies on both sides of the Valley, in the same manner as *Barāmūlā*." There is either some corruption in the text here or Albērūnī's informant had not made himself sufficiently clear. What he must have meant, is that Ushkārā lay on the opposite side of the river in the same manner as Barāmūlā, that is at the entrance of the ravine. Barāmūlā as the text spells the name, reproduces an earlier form of the Kaśmīrī *Varahmul*, from Skr. *Varāhamūla*.

reclaim. Leaving this swamp, the Jailam passes the town of Ūshkārā, and then enters the above-mentioned ravine."

The only mistake and this one easily explained is contained in the account of the river's origin. It is described as rising "in the mountains *Haramakōt* where also the Ganges rises; cold, impenetrable regions where the snow never melts nor disappears." It is easy to recognize here the reference to Mount *Haramukuṭa* and the sacred Gaṅgā-lake at the foot of its glacier in which Kaśmīrian tradition places the source of the Sindhu river.[1] The latter is the greatest tributary of the Vitastā within Kaśmīr and is traditionally identified with the Gaṅgā, as on the other hand the Vitastā with the Yamunā.[2] The special sanctity of the Sindu ('Uttaragaṅgā') and the popularity of its supposed source as a pilgrimage place sufficiently account for the substitution in Albērūnī's notice.

Entering the open plain of the Kaśmīr Valley by the Bārāmūla gorge "you have for a march of two more days, on your left the mountains of Bolor and Shamīlān, Turkish tribes who are called *Bhattavaryān*. Their king has the title of *Bhatta-Shāh*." It is clear that Albērūnī's informant here means the mountain ranges to the north and north-west of the Valley which form its borders towards the Dard country and Baltistān. The latter has been known by the name of Bolor for many centuries.[3] I am unable to trace in Kaśmīrian or other sources the names of the 'Shamīlān' and 'Bhatta.'[4] But as a subsequent remark mentions '*Gilgit*, *Aswīra*, and *Shiltās*,' that is the modern Gilgit, Hasōr (Astōr) and Cilās as their chief places, there can be no doubt that the inhabitants of the Dard territory to the north-west of Kaśmīr are meant together with the Baltis.

Description of Pīr Pantsāl.

"Marching on the right side [of the river], you pass through villages, one close to the other, south of the capital and thence you reach the mountain *Kulārjak*, which is like a cupola, similar to the

1 See below, § 57, and Rājat. note i. 57.

2 See *Rājat.* note i. 57. In *Haracar.* iv. 54 the Vitastā itself is designated as the 'Gaṅgā of the north' (Uttaragaṅgā). This renders the location of its source in the lake of Haramukuṭa still more intelligible from a traditional point of view.

3 Compare YULE, *Marco Polo*, i. pp. 187, *sq.*; CUNNINGHAM, *Anc. Geogr.*, p. 83.

4 Albērūnī's *Bhatta* may possibly represent the term *Bhuṭṭa* or *Bhauṭṭa* (the modern Ks. *Buṭ*) which is applied in the Sanskrit Chronicles to the population of Tibetan descent generally, from Ladākh to Baltistān. (See *Rājat.* note i 312). Albērūnī calls their language Turkish, but it must be remembered that he has spoken previously (i. p. 206) of 'the Turks of Tibet' as holding the country to the east of Kaśmīr. There the Tibetans in Ladākh and adjacent districts are clearly intended.

mountain *Dunbāwand* (Damāwand). The snow there never melts. It is always visible from the region of Tākēshar and Lauhāwar (Lahore)."

I have already elsewhere shown that the mountain here described is the *Taṭakūṭī* peak (33° 45′ lat. 74° 33′ long.).[1] It rises to a height of 15,500 feet in the central part of the Pīr Pantsāl range and is the loftiest as well as the most conspicuous point of the mountain chain to the south of Kaśmīr. It has the shape described by Albērūnī, is surrounded by extensive snow-fields and can be seen through the greatest part of the year from the Panjāb districts of Siālkōt and Gujrānwāla corresponding to the old Tākēshar (Ṭakkadeśa). Albērūnī puts the distance between this peak and the Kaśmīr plain at two farsakh. This estimate is somewhat too low, inasmuch as the direct distance on the map between the peak and the nearest point of the open Valley is about 15 miles.

He is, however, quite exact in placing the fortress *Lauhūr* to the west of it as we have already seen that this stronghold is identical with the *Loharakoṭṭa* of the Chronicle, the present Lohārin. The entrance to the Lohārin Valley lies almost due west of Taṭakūṭī. To the south of the peak he places 'the fortress *Rājagirī*' which is also mentioned by Kalhaṇa, vii. 1270, and must be looked for somewhere in the Upper Sūran Valley. Albērūnī speaks of these two hill fortresses as "the strongest places" he had ever seen.

He had personally had an opportunity of judging of their strength when accompanying Maḥmūd's expedition against Kaśmīr. On that occasion he had made the observation of the latitude of Lauhūr (Lohara) to which he refers in another chapter of his work.[2] The result of this observation, 33° 40′ lat. as shown in the author's Canon Masudicus, very closely approaches the real one, which is 33° 48′ according to the Survey map. It is very probable that he obtained at the same occasion the very accurate information regarding the distance from Lauhūr to the Kaśmīr capital. He gives it as 56 miles, "half the way being rugged country, the other half plain." Albērūnī's measurement according to the previously stated valuation represents about 69 English miles. This is but little in excess of the actual road distance viâ the Tōṣāmaidan pass as estimated by me on the tour referred to in the above-quoted paper. The description of the road, too, corresponds closely to the actual character of the route.

Albērūnī closes his account of Kaśmīr geography with a reference to the town of *Rājawarī* which is the *Rājapurī* of the Chronicles, the

1 See my paper '*The Castle of Lohara*,' *Ind. Ant.*, 1897, § 12.

2 See *India*, i. p. 317, with Prof. Sachau's note ii. p. 341. In the same passage he quotes the latitude of Srīnagar as 34° 9′ from the *Karaṇasāra*.

modern *Rajaurī*. In Hindu times it was the capital of a small hill-state situated immediately to the south of the Pīr Pantsāl range and often tributary to Kaśmīr. Albērūnī distinctly names it as the farthest place to which Muhammadan merchants of his time traded and beyond which they never passed. We have already seen what the connection was which enabled him to collect reliable and detailed information of the region beyond that barrier. As another proof of the accurate knowledge thus acquired, we may finally mention his description of the Kaśmīr climate which is far more exact than any account available to us previous to the second quarter of this century.[1]

Section IV.—Indian notices.

Deficiency of non-Kaśmīrian texts.

15. Nothing, perhaps, can illustrate better the lamentable lack of exact geographical information in general Sanskrit literature than to turn from the accounts of the Chinese pilgrims and Albērūnī to what Indian authors, not Kaśmīrians themselves, can tell us of the Valley.

Were we to judge merely from the extreme scantiness of the data to be gleaned from their extant works, we might easily be led to assume that Kaśmīr was to them a country foreign and remote in every way. However, we observe the same vagueness and insufficiency of local references in the case of territories immediately adjoining the old centres of literary activity. It is hence evident that the conspicuous absence of useful information on Kaśmīr may equally well be attributed to the general character of that literature.

The name *Kaśmīra*, with its derivative *Kāśmīra*, as the designation of the country and its inhabitants, respectively, is found already in the Gaṇas to Pāṇini's grammar and in Patañjali's comments thereon.[2] The Mahābhārata too refers in several passages to the *Kāśmīras* and their rulers, but in a fashion so general and vague that nothing more but the situation of the country in the hill region to the north can be concluded therefrom.[3]

The Purāṇas enumerate the *Kāśmīras* accordingly in their lists of northern nations. But none of the tribal names, partly semi-mythical,

1 See *India*, i. p. 211, and below, § 77.

2 See the references in the Thesaurus of Böhtlingk-Roth, s. v. *Kāśmīra*, and in supplement V., p. 1273. The references to other texts in this paragraph have also been taken from that work except where otherwise specified.

3 Compare in particular *Mahābh.* II. xxvii. 17.

which are mentioned along with them in the Purāṇas examined by me, indicate any more distinct location of the country.[1]

Varāhamihira (circ. 500 A.D.) in his *Bṛhatsaṁhitā* includes the Kāśmīras curiously enough in the north-eastern division. Among the regions and peoples named under the same heading there are a number of purely legendary character like 'the kingdom of the dead' (*naṣṭa-rājya*), the 'gold region,' 'the one-footed people,' etc. But besides these names and others of a different type which cannot be clearly identified, we recognize the names of tribes which undoubtedly must be located in the immediate neighbourhood of Kaśmīr. Thus we have the *Abhisāras*, *Daradas*, *Dārvas*, *Khaśas*, *Kīras*, and somewhat more distant the country of *Kulūta* (Kulu) and the *Kauṇindas* or *Kaulindras* (Ptolemy's Κυλινδρίνη).[2]

Perhaps the most specific piece of information regarding Kaśmīr that Sanskrit literature outside the Valley can convey to us, is contained in the term *Kāśmīra* or *Kāśmīraja* which designates the saffron and according to the lexicographers also the root of the *kuṣṭha* or *costus speciosus*. Both the saffron and the Kuṣṭha have since early times been famous products of Kaśmīr.[3]

Section V.—The Kas'mīr Chronicles.

Abundance of Kaśmīrian sources.

16. The want of detailed and exact geographical information just noticed in old Indian literature generally stands in striking contrast to the abundance of data supplied for our knowledge of old Kaśmīr by the indigenous sources. The explanation is surely not to be found in the mere fact that Kaśmīrian authors naturally knew more of their own country than others for whom that alpine territory was a distant, more or less inaccessible region. For were it so, we might reasonably expect to find ourselves equally well informed about the early topography of other

1 Compare *Vāyupur.* xlv. 120; xlii. 45; *Padmapur.* I. vi. 48, 62; *Bhāgavatapur.* XII. i. 39; *Viṣṇupur.* IV. xxiv. 18.

2 See *Bṛhatsaṁhitā*, xiv. 29 *sqq.*, and *Ind. Ant.*, 1893, pp. 172, 181; also Alberūnī, *India*, i. p. 303.

3 Regarding the saffron cultivation of Kaśmīr, compare Lawrence, *Valley*, p. 342, and below, § 78.

The *kuṣṭha*, now known in Kaśmīr by the name of *kuth*, is the aromatic root of the Saussurea Lappa which grows in abundance on the mountains of Kaśmīr; see Lawrence, p. 77. The *kuth* is still largely exported to China and might be hence one of the medicinal plants which Hiuen Tsiang particularly notices among Kaśmīr products; see *Si-yu-ki*, i. p. 148.

parts of India which have furnished their contingent to the phalanx of Sanskrit authors. Yet unfortunately this is by no means the case.

The advantageous position we enjoy in Kaśmīr is due to a combination of causes of which the most important ones may at once be here indicated. In the first place we owe it to the preservation of connected historical records from a comparatively early date which acquaint us with a large number of particular localities and permit us to trace their connection with the country's history.

Another important advantage results from the fact that Kaśmīr, thanks chiefly to its geographical position and the isolation resulting from it, has escaped those great ethnic and political changes which have from time to time swept over the largest portion of India. Local tradition has thus remained undisturbed and still clings to all prominent sites with that tenacity which is characteristic of alpine tracts all over the world. The information preserved by this local tradition in Kaśmīr has often proved for our written records a most welcome supplement and commentary.

Finally it must be remembered that in a small mountain country like Kaśmīr, where the natural topographical features are so strongly marked and so permanent, the changes possible in historical times as regards routes of communication, sites for important settlements, cultivated area, etc., are necessarily restricted. The clear and detailed evidence which the facts of the country's actual topography thus furnish, enables us to elucidate and to utilize our earlier data, even where they are scanty, with far greater certainty and accuracy than would be possible on another ground. The observations here briefly indicated will be in part illustrated by the review of our Kaśmīrian sources.

Kalhaṇa's Rājataraṅgiṇī.

17. Epigraphical records on stone or copper such as elsewhere in India form the safest basis for the study of local topography, have not yet come to light in Kaśmīr. The few fragmentary inscriptions hitherto found are all of a late date and do not furnish any topographical information. In their absence Kalhaṇa's Rājataraṅgiṇī is not only the amplest but also the most authentic of our sources for the historical geography of Kaśmīr. The questions connected with the historical value of the work, its scope and sources, have been fully discussed in the introduction to my translation. Here we have only to consider its character as our chief source of information on the old topography of Kaśmīr.

KALHAṆA'S work, composed in the years 1148-49 A.D., is our oldest record of the history of the various dynasties which ruled Kaśmīr from the earliest period to the time of the author. The earlier Chronicles

which Kalhaṇa has used and quoted, have all been lost. We are hence unable to judge what he took from each, and how he worked up their contents. Largely legendary in the first three Books, his narrative reaches firm historical ground with the Kārkoṭa dynasty in the Fourth Book. From Avantivarman's reign (A.D. 855–883) onwards which opens the Fifth Taraṅga, the Chronicle may be considered an accurate and reliable historical record. As the author approaches his own time, his narrative grows more and more detailed.

In illustration of the latter fact it may be mentioned that of the whole work comprising nearly eight thousand Ślokas, more than one-half is devoted to the relation of the reigns which fill the century and a half immediately preceding the date of composition. We have certainly no reason to regret the fulness with which Books vii. and viii. relate the events of the author's own time and of the period that lay near it. From a historical point of view, Kalhaṇa's detailed account of contemporary history and the near past must always retain its value. We can appreciate its advantages also with special regard to the elucidation of the old topography of the country. This will become at once clear by a brief analysis of the topographical information contained in the Chronicle.

It is doubtful whether Kalhaṇa writing for readers of his own country and time, would have deemed it necessary to give us a connected and matter-of-fact description of the land, even if the literature which he knew and which was his guide, had furnished him with a model or suggestion for such a description. The nearest approach to it is contained in a brief passage of his introduction, i. 25–38. This acquaints us in a poetical form with the legends concerning the creation of Kaśmīr and its sacred river, the Vitastā, and enumerates besides the most famous of the many Tīrthas of which Kaśmīr has ever boasted in abundance. The few panegyric remarks which are added in praise of the land's spiritual and material comforts, i. 39–43, do credit to the author's love of his native soil. But they can scarcely be held to raise the above to a real description of the country.

Kalhaṇa's notices of Tīrthas.

18. Notwithstanding the absence of such a description Kalhaṇa's Chronicle yet proves by far our richest source of information for the historical geography of Kaśmīr. This is due to the mass of incidental notices of topographical interest which are spread through the whole length of the narrative. They group themselves conveniently under three main heads.

Considering the great attention which the worship of holy places has at all times claimed in Kaśmīr, we may well speak first of the

notices which appertain to the *Topographia sacra* of the Valley. Kaśmīr has from early times to the present day been a land abundantly endowed with holy sites and objects of pilgrimages. Kalhaṇa duly emphasizes this fact when he speaks, in the above-quoted introductory passage, of Kaśmīr as a country 'where there is not a space as large as a grain of sesamum without a Tīrtha.'[1]

Time and even the conversion to Islām of the great majority of the population has changed but little in this respect. For besides the great Tīrthas which still retain a fair share of their former renown and popularity, there is scarcely a village which has not its sacred spring or grove for the Hindu and its Ziārat for the Muhammadan. Established as the latter shrines almost invariably are, by the side of the Hindu places of worship and often with the very stones taken from them, they plainly attest the abiding nature of local worship in Kaśmīr.

This cannot be the place to examine in detail the origin and character of these Tīrthas and their importance for the religious history of the country. It will be enough to note that the most frequent objects of such ancient local worship are the springs or *Nāgas*, the sacred streams and rivers, and finally the so-called *svayaṁbhū* or 'self-created' images of gods which are recognized by the eye of the pious in various natural formations. These several classes of Tīrthas can be traced throughout India wherever Hindu religious notions prevail, and particularly in the sub-Himalayan regions (Nepāl, Kumaon, Kāngra, Udyāna or Swāt). Still there can be no doubt that Kaśmīr has from old times claimed an exceptionally large share in such manifestations of divine favour.

Nature has indeed endowed the Valley and the neighbouring mountains with an abundance of fine springs. As each of these has its tutelary deity in the form of a *Nāga*,[2] we can easily realize why popular tradition looks upon Kaśmīr as the favourite residence of these deities.[3] Hiuen Tsiang already had ascribed the superiority of Kaśmīr over other countries to the protection it received from a Nāga.[4] Kalhaṇa, too, in his introduction gives due prominence to the distinction which the land

[1] i. 38.

[2] Compare my note i. 30 on the Nāgas and their worship.

[3] The *Nīlamatapurāṇa*, 900–972, gives a long list of Kaśmīr Nāgas and puts their number at thousands, nay *Arbudas* (see 971).

[4] *Si-yu-ki*, i. p. 148. Hiuen Tsiang, like other Chinese pilgrims, calls the Nāgas by the term of 'dragon;' no doubt because the popular conception represents them under the form of snakes living in the water of the springs or lakes they protect.

enjoys as the dwelling-place of *Nīla*, king of Nāgas, and of many other of his tribe.[1]

Kalhaṇa's frequent references to sacred springs and other Tīrthas are of topographical interest, because they enable us to trace with certainty the earlier history of most of the popular pilgrimage places still visited to the present day. The list already mentioned acquaints us with the miraculous springs of *Pāpasūdana* and *Tri-Saṁdhyā*, *Sarasvatī's* lake on the *Bheḍa* hill, the 'Self-created Fire' (*Svayaṁbhū*), and the holy sites of *Nandikṣetra*, *Śāradā*, *Cakradhara* and *Vijayeśa*. It shows which were the Tīrthas most famous in Kalhaṇa's time. The legends connected with the early semi-mythical kings give the chronicler frequent occasion in the first three Books to speak in detail of particular sacred sites. Almost each one of the stories furnishes evidence for the safe location of the latter.[2] But also in the subsequent and purely historical portions of the work we read often of pilgrimages to such sacred places or of events which occurred at them.

Kalhaṇa shows more than once so accurate a knowledge of the topography of particular Tīrthas that his personal visits to them may be assumed with great probability. This presumption is particularly strong in the case of *Nandikṣetra* which his father Caṇpaka is said to have often visited as a pilgrim and to have richly endowed, and of the neighbouring shrine of *Bhūteśvara*.[3] Also the distant Tīrtha of Śāradā in the Kiṣangaṅgā Valley seems to have been known personally to the Chronicler.[4] Considering the popularity which pilgrimages to sacred sites have always enjoyed among Kaśmīrians, the conclusion seems justified that Kalhaṇa owed perhaps no small part of his practical acquaintance with his country's topography, to the tours he had made as a pilgrim.

Kalhaṇa's references to foundations.

19. A second fruitful source of valuable topographical notices is contained in those very numerous references which Kalhaṇa makes to the foundation of towns, villages, estates, shrines, and buildings by particular kings. If we leave aside the curious list, i. 86–100, taken by

1 *Rājat.* i. 28–31. The Nāgas are supposed to have come to Kaśmīr when Kaśyapa, their father, had drained 'the lake of Satī,' and to have found there a refuge from Garuḍa; comp. *Nīlamata*, 59 *sqq.*

2 Compare the legends of the *Sodara* spring, i. 123 *sqq.*; of the *Kṛtyāśrama* Vihāra, i. 131 *sqq.*; of the Jyeṣṭharudra at *Nandikṣetra* and *Śrīnagarī*, i. 113, 124; the story of the *Suśravas* Nāga, i. 203 *sqq.*; the description of the pilgrimage to the *Takṣaka* Nāga, i. 220 *sqq.*; the story of the *Īśeśvara* temple, ii. 134; of *Raṇasvāmin*, iii. 439 *sqq.*, etc.

3 See vii. 954; viii. 2365 and note v. 55 *sqq.* Compare also below, § 57.

4 See Note L, viii. 2492, § 4.

Kalhaṇa from Padmamihira in which certain local names are by fanciful etymologies connected with seven of the 'lost kings,'[1] it may be safely assumed that these attributions are based either on historical fact or at least on genuine local tradition. Kalhaṇa specially informs us in his introduction[2] that among the documents he had consulted for his work, there were 'the inscriptions recording the consecration of temples and grants [of land] by former kings.' Such records no doubt supplied a great portion of the numerous notices above referred to. Often such notices may have been taken from less authentic sources. But we may always claim for them the merit of acquainting us with the names of the respective localities and buildings, as used in the official language of Kalhaṇa's time, and with the traditions then current regarding their origin and date.

The system of nomenclature which was regularly followed in Kaśmīr in naming new foundations, must have helped to preserve a genuine tradition regarding the founder. In the vast majority of cases the names of new towns and villages are formed by the addition of *-pura* to the name of the founder, either in its full or abbreviated form.[3] Similarly the names of temples, monasteries, Maṭhas and other religious structures show the name of their builder followed by terms indicating the deity or the religious objects to which the building was dedicated.[4] Many of

[1] See regarding this unhistorical list note i. 86. The local names, like *Khonamuṣa*, *Godharā*, *Samāṅgāsā*, etc., are all genuine enough. What Padmamihira did was to evolve fictitious names of kings out of these by means of popular etymology.

[2] i. 15.

[3] Thus we have, *e.g.*, the well-known localities of *Huṣkapura*, *Kaniṣkapura*, *Juṣkapura* (which retain the memory of their Indo-Scythian founders); *Pravarapura* (for Pravarasenapura), the old official designation of the present capital; *Padmapura*, *Avantipura*, *Jayapura* (for Jayāpīḍapura) and a host of others. The custom of naming new localities in this fashion, or of renaming earlier ones in honour of the actual ruler, can be traced through successive periods of Muhammadan and Sikh rule down to the present day; comp. *e.g.*, *Zainapōr* (named after Zainu-l-'ābidīn); *Shahābuddīnpūr* (now Shād[1]pūr); *Muḥammadpūr*; *Raṇbīrsinghpūr* (intended to replace Shāhābād), etc.

[4] Thus in the case of Śiva-temples *-īśa* or *-īśvara* is invariably added (comp., *e.g.*, Pravareśvara, Amṛteśvara, etc.), as in that of Viṣṇu-shrines with equal regularity *-svāmin* (*-keśava*); comp. *e.g.*, *Muktasvāmin* (built by Muktāpīḍa), *Avantisvāmin*, *Bhīmakeśava* (erected by Bhīmapāla Śāhi), etc.

Buddhist monasteries receive the name of their founder with the addition of *-vihāra* or *-bhavana*; comp. *Jayendravihāra*, *Caṅkuṇavihāra*, *Amṛtabhavana* (founded by Queen Amṛtaprabhā, the present Ânt[a]bavan), *Skandabhavana* (for Skandaguptabhavana), and many more, as shown in my *Notes on Ou-k'ong*, p. 4.

For Maṭhas compare e. g. *Diddāmaṭha* (Did[a]mar); *Subhaṭṭāmaṭha*, *Nandāmaṭha*, *Loṭhikāmaṭha*, *Cakramaṭha*, etc.

these religious structures left their names to the sites at which they were erected. They can thus be traced to the present day in the designations of villages or city quarters.[1]

The topographical interest which Kalhaṇa's notices of town-foundations possess is considerably enhanced by the fact that in more than one case they are accompanied by accurate descriptions of the site chosen and the buildings connected with them. Thus Kalhaṇa's detailed accounts of the foundation of *Pravarapura*, iii. 336–363, is curiously instructive even in its legendary particulars. It enables us to trace with great precision the original position and limits of the city which was destined to remain thereafter the capital of Kaśmīr.[2] Similarly the description given of *Parihāsapura* and its great shrines has made it possible for me to fix with accuracy the site of the town which Lalitāditya's fancy elevated for a short time to the rank of a capital, and to identify the remains of the great buildings which once adorned it.[3] Not less valuable from an antiquarian point of view is the account given to us of the twin towns *Jayapura* and *Dvāravatī* which King Jayāpīḍa founded as his royal residence near the marshes of Andʰrkōṭh.[4] We shall see below to what extent the correct identification of the extant ruins of Kaśmīr has been facilitated by these and similar accounts of the Rājataraṅgiṇī.

Topographical data in historical narrative.

20. Valuable as the data are which we gather from the two groups of notices just discussed, it may yet be doubted whether by themselves, that is, unsupported by other information, they can throw as much light on the old topography of Kaśmīr as the notices which we have yet to consider. I mean the whole mass of incidental references to topographical points which we find interwoven with the historical narrative of the Chronicle.

It is evident that where localities are mentioned in the course of a connected relation of events, the context if studied with due regard to the facts of the actual topography, must help us towards a correct identification of the places meant. In the case of the previous notices the Chronicler has but rarely occasion to give us distinct indications as to the position of the sites or shrines he intended. In our

[1] The name of the *Amṛtabhavana*, iii. 9, survives in the present Ântᵃbavan; *Diddāmaṭha* and *Skandabhavana* in the Didᵃmar and Khandᵃbavan quarters of Śrīnagar; similarly Lalitāditya's great temple of *Mārtāṇḍa* left its name to the village and district of Maṭan.

[2] See note iii. 339–349 and below, § 92.

[3] Compare Note *F*, iv. 194–204, and below, § 121.

[4] See note iv. 506–511; also below, § 122.

attempts to identify the latter we have therefore only too often to depend either on the accidental fact of other texts furnishing the required evidence, or to fall back solely on the comparison of the old with modern local names. That the latter course if not guided and controlled by other evidence, is likely to lead us into mistakes, is a fact which requires no demonstration for the critical student.

It is different with the notices the consideration of which we have left to the last. Here the narrative itself, in the great majority of cases, becomes our guide and either directly points out to us the real locality meant or at least restricts to very narrow limits the area within which our search must proceed. The final identification can then be safely effected with the help of local tradition, by tracing the modern derivative of the old local name, or by other additional evidence of this kind.

For the purpose of such a systematic search it is, of course, a very great advantage if the narrative is closely connected and detailed. And it is on this account that, as already stated above (§ 17), Kalhaṇa's lengthy relation of what was to him recent history, in Books vii. and viii., is for us so valuable. An examination of the topographical notes in my commentary on the Chronicle will show that the correct identification of many of the localities mentioned in the detached notices of the first six Books has become possible only by means of the evidence furnished by the more detailed narrative of the last two.

In this respect the accounts of the endless rebellions and other internal troubles which fill the greater portion of the reigns of the Lohara dynasty, have proved particularly useful. The description of the many campaigns, frontier-expeditions and sieges connected with these risings supplies us with a great amount of topographical details mutually illustrating each other. By following up these operations on the map,—or better still on the actual ground, as I was often able to do,—it is possible to fix with precision the site of many old localities which would otherwise never have emerged from the haze of doubt and conjecture.

In order to illustrate these general remarks it will be sufficient to refer to a few typical examples among the many identifications thus arrived at. As the corresponding notes of my commentary fully indicate the evidence on which these identifications are based, as well as the process of reasoning by which they were arrived at, it will not be necessary here to go into details. A very characteristic example is furnished by the important stronghold and territory of Lohara, which was formerly supposed to be Lahore. Its correct location at the present *Lohᵛrin* and the identification of the several places and routes

mentioned in the same neighbourhood became possible only, as Note *E*, iv. 177, shows,[1] through the indications contained in Kalhaṇa's description of the several sieges which this mountain fastness underwent in his own time. Similar instances are the identifications of the GOPĀDRI hill (the present Takht-i Sulaimān), and of the streams MAHĀSARIT and KṢIPTIKĀ (Mār and Kut'kul). Though prominent features in the topography of the capital itself, they could not have been correctly located but for the evidence supplied by the narrative of the last Book.[2] The same is the case, *e.g.*, with the name of the district HOLAḌĀ (Vular) and the important ethnic designation of *Khaśa*.[3]

Accuracy of Kalhaṇa's topograhy.

21. It is impossible to read attentively Kalhaṇa's Chronicle and in particular those portions which give fuller occasion for the notice of localities, without being struck with the exactness of his statements regarding the latter and with, what I may call, his eye for matters topographical.

We must appreciate these qualities all the more if we compare Kalhaṇa's local references with that vague and loose treatment which topographical points receive at the hands of Sanskrit authors generally.[4] If it has been possible to trace with accuracy the great majority of localities mentioned in the Chronicle, this is largely due to the precision which Kalhaṇa displays in his topographical terminology. It is evident that he had taken care to acquaint himself with the localities which formed the scene of the events he described. Here too I may refer for more detailed evidence to my translation of the work and the notes which accompany it. A few characteristic points may, however, be specified as examples.

Striking evidence for the care with which Kalhaṇa indicates topo-

[1] Compare also my paper on the 'Castle of Lohara,' *Ind Ant.* 1897, p. 225 *sqq.* below, § 49.

[2] Compare for *Gopādri*, notes i. 341; viii. 1104–10; for the *Mahāsarit*, note iii. 339–349; for the *Kṣiptikā*, note viii. 732.

[3] See notes i. 306 and i. 317.

[4] Nor should we forget the difficulty which Kalhaṇa had to face by writing in metrical form. True indeed it is what Albērūnī says of this form as adopted by Hindu scientific writers: "Now it is well-known that in all metrical compositions there is much misty and constrained phraseology merely intended to fill up the metre and serving as a kind of patchwork, and this necessitates a certain kind of verbosity. This is also one of the reasons why a word has sometimes one meaning and sometimes another" (*India*, i. p. 19).

Fortunately Kalhaṇa has managed to escape these dangers as far as the topographical notices of his work are concerned. We find in his local terminology neither that mistiness nor multiplicity of meaning Albērūnī so justly complains of.

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graphical details, is furnished by his description of the great operations which were carried out under Avantivarman with a view to regulating the course of the Vitastā and draining the Valley.[1] Thanks to the exactness with which the relative position of the old and new confluence of the Vitastā and Sindhu is described, before and after the regulation, respectively, it has been possible even after so many centuries to trace in detail the objects and results of an important change in the hydrography of the Valley.[2]

Equal attention to the topographical details we find in numerous accounts of military operations. Of these it will suffice to quote here the descriptions of the several sieges of S'rīnagar, under Sussala;[3] the battle on the *Gopādri* hill in the same reign;[4] the blockade of *Lohara*, with the disastrous retreat through the mountains that followed,[5] and, last but not least, the siege of the *S'iraḥśilā* castle. The topographical accuracy of the latter account as proved in Note *L*, viii. 2492, almost presupposes on Kalhaṇa's part a personal examination of the site. It is all the more noteworthy, because the scene of the events there recorded was a region outside Kaśmīr proper, distant and difficult of access.

There are also smaller points that help to raise our estimate of Kalhaṇa's reliability in topographical matters. Of such I may mention for example the close agreement we can trace everywhere between Kalhaṇa's statements regarding distances, whether given in road or time-measure, and the actual facts. The number of marches reckoned by him is thus always easily verified by a reference to the stages observed on the corresponding modern routes.[6] Not less gratifying is it to find how careful Kalhaṇa is to distinguish between homonymous localities.[7] In addition we must give credit to our author for the just observation of many characteristic features in the climate, ethnography, and economical condition of Kaśmīr and the neighbouring regions.[8] All these notices help to invest with additional interest the data furnished for the old topography of the country.

1 Compare v. 84–121.

2 Compare Note *I*, v. 97–100, on the *Vitastāsindhusaṁgama*, and below, §§ 69–72.

3 See viii. 729 *sqq*; 1060 *sqq*.

4 Compare viii. 1099–1115.

5 See viii. 1842–80 and Note *E*, iv. 177, § 10.

6 Compare for distance measurements note i. 264; v. 103; vii. 393; for the reckoning of marches on the Vitastā Valley route, v. 225; on the Tōṣ̄maidān pass, vii. 140; on the route to the Pīr Pan<u>ts</u>āl Pass, vii. 558; on the way to Mārtāṇḍa, vii. 715, etc.

7 Compare notes i. 113; i. 124; v. 123 on the several *Jyeṣṭharudras* and the way in which Kalhaṇa specifies them.

8 Compare below, §§ 77–79.

If the advantages thus accorded to us are duly weighed there seems every reason to congratulate ourselves on the fact that the earliest and fullest record of Kaśmir history that has come down to us was written by a scholar of Kalhaṇa's type. Whatever the shortcomings of his work from a historical point of view may be, we may well claim for him the merit that he has provided us with a sound and ample basis for the study of the historical geography of his country.

Sanskrit form of local names.

22. Another point still remains to be considered here in connection with Kalhaṇa's Chronicle, *viz.*, to what extent can we accept the Sanskrit forms found in his text as the genuine local names of the period. This question deserves attention, because the popular language actually spoken in Kaśmīr in Kalhaṇa's time and for many centuries earlier, was not Sanskrit but undoubtedly an Apabhraṁśa dialect derived from it, which has gradually developed into the modern Kaśmīrī.

Notwithstanding this circumstance I think that Kalhaṇa's local names can on the whole safely be taken as the genuine designations of the localities, *i.e.*, those originally given to them. My grounds for this belief are the following.

We have ample evidence to show that Sanskrit was the official and sole literary language of the country, not only in Kalhaṇa's own time but also in those earlier periods from which the records used by him may have dated. This official use of Sanskrit we know to have continued in Kaśmīr even into Muhammadan times. It assures us at once that the vast majority of village and town names must from the beginning have been given in Sanskrit. A detailed examination of Kalhaṇa's local names will easily demonstrate, on the one hand that these names are of genuinely Sanskrit formation, and on the other, that their modern Kaśmīrī representatives are derived from them by a regular process of phonetic conversion. We look in vain among this class of old local names for any which would show a foreign, *i.e.*, non-Aryan origin and might be suspected of having only subsequently been pressed into a Sanskritic garb.

As Sanskrit was used as the language of all official records for many centuries previous to Kalhaṇa's time, the Sanskrit names originally intended for the great mass of inhabited places could be preserved, in official documents anyhow, without any difficulty or break of tradition. And from such documents most of Kalhaṇa's notices of places were undoubtedly derived, directly or indirectly.

Only in rare cases can we suppose that the original form of a local name of this kind had been lost sight of, and that accordingly the Chronicler, or his authority, had to fall back on the expedient of sanskriti-

zing in its stead the Apabhraṁśa or Kaśmirī form, as well as he could. There are in fact a few instances in which we have indications of such a metamorphosis. Thus we find the same local name spelt either *Bhaleraka* or *Baleraka* in the Chronicle, and a village which Kalhaṇa calls *Ghoramūlaka*, referred to by Abhinanda, the author of the Kādambarīkathāsāra (first half of 9th century), as *Gauramūlaka*.[1] It is difficult to avoid the conclusion that we have here varying attempts to reproduce in a Sanskritic garb original Apabhraṁśa names. But these cases are very rare indeed, and even in them other explanations of the different spellings are possible.

These observations apply with nearly the same force also to other local names recorded in the Chronicle, such as those of mountains, streams, passes, etc. The great majority of these names must have very early found their place in official documents or, as we shall see below, in the Sanskrit legendaries or Māhātmyas of the numerous Tīrthas. If any of them are in reality adaptations of Prakrit or Apabhraṁśa forms, their quasi-official use is yet likely to have originated a long time before the date of Kalhaṇa.

Even to the present day the local nomenclature of Kaśmīr, whether in the Valley or in the mountains, shows throughout an unmistakeably Sanskritic character. This is most clearly illustrated by the constant recurrence of such terms as *-pūr* or *pōr* (< pura), *-mar* (< maṭha), *-ʸhōm* (< āśrama), *-kōṭh* (< koṭṭa), *-gām* or *gōm* (< grāma), *-kuṇḍᵊl* (< kuṇḍala), *-vōr* (< vāṭa), in village names; of *-sar* (< saras), *-nambal* (< naḍvalā), *nāg* (< nāga) in names of lakes, marshes, etc.; of *-van* (< vana), *-nāṛ*, (< nāḍa), *-marg* (< maṭhikā), *-gul* (< galikā), *brāṛ* (< bhaṭṭārikā), *-vath* (< patha) in designations of alpine localities, peaks, passes, etc.; *-kul* (< kulyā), *-khan* (< khani) in names of streams and canals.

The Sanskrit etymology of the specific names preceding these terms, is even in their modern phonetic form very often equally transparent. At an earlier stage of the language the Apabhraṁśa names must have approached the corresponding Sanskrit forms much more closely. The reproduction of the popular names in a Sanskrit form could have then but rarely been attended with much difficulty or doubt. We may hence safely assume that the Sanskrit forms recorded by Kalhaṇa represent in most cases correctly the original local names, and in the remainder cannot differ much from them.

Later Sanskrit Chronicles.

23. The later Sanskrit Chronicles which were composed with the distinct object of continuing Kalhaṇa's work, furnish valuable supplements to the topographical information contained in the latter.

[1] Compare notes viii. 1861, and vii. 1239; viii. 2410.

These Chronicles are the *Rājataraṅgiṇī* of Jonarāja who continued the narrative down to the reign of Sultān Ẓainu-l-'ābidin and died over his work, A.D. 1459;[1] the *Jaina-Rājataraṅgiṇī* composed by Jonarāja's pupil Śrīvara which deals in four Books with the period A.D. 1459–86;[2] and finally, the Fourth Chronicle which was begun under the name *Rājāvalipatākā* by Prājyabhaṭṭa and completed by his pupil Śuka some years after the annexation of Kaśmīr by Akbar, A.D. 1586.[3]

It will be seen from the above dates that the narrative of the last two works falls entirely beyond the period of Hindu rule to which our enquiry is limited, and which may be considered to close finally with the usurpation of Shāh Mīr, A.D. 1339. The same holds good of the greater portion of Jonarāja's Chronicle. The reigns of the late Hindu rulers, from Jayasiṁha to Queen Koṭā, are there disposed of with a brevity corresponding more to their own insignificance than to the intrinsic historical interest of the epoch.[4] Notwithstanding this difference in date the materials supplied by these later Chronicles have often proved of great use in clearing up points of the old topography of Kaśmīr. For the mass of localities mentioned in them goes back to the Hindu period, and the names by which they are referred to, are also still mostly the old ones.

Yet on the whole the inferiority of these later Chronicles when compared with Kalhaṇa's work, is as marked in the matter of topographical information as it is in other respects. In the first place it must be noted that the whole text of these three distinct works does not amount to more than about one-half of Kalhaṇa's work. For references to sacred sites and buildings and other places of religious interest the account of Muhammadan reigns offers naturally but little opportunity. The incidental notices of other localities are also in proportion less numerous and instructive. For these later authors allow considerably more room to episodic descriptions and do by no means show that care for accuracy in topographical statements which we have noticed in Kalhaṇa.

It is curious to note how the gradual decline of Hindu learning in Kaśmīr during the period of troubles and oppression which lasted with short interruptions for two and a half centuries previous to Akbar's conquest, is marked also in the character and contents of these later

[1] See *Śrīv.* i. 6.

[2] See Fourth Chron. 6.

[3] Compare Fourth Chron. 8 *sqq.* Prājyabhaṭṭa's composition ended with the year A.D. 1513-14 and the reign of Fatah Shāh (verses 14-64).

[4] The narrative of the period 1149–1339 A.D. fills only 305 verses in Jonarāja's Chronicle (347 according to the Bombay edition).

Chronicles. JONARĀJA was a scholar of considerable attainments, but apparently without any originality. He shows himself yet well-acquainted with the old local nomenclature of the Valley, though outside it he too commits himself to forms like *Puruṣavīra* (for Peshawar, recte Puruṣapura), etc.

ŚRĪVARA is a slavish imitator of Kalhaṇa, not above reproducing whole verses of his predecessor. His text looks often more like a *cento* from the Rājataraṅgiṇī than an original composition. Notwithstanding the thorough study of Kalhaṇa's work which this kind of exploitation presupposes, we find Śrīvara more than once betraying ignorance of the old names for well-known Kaśmīr localities. Thus we have the name of the *Mahāsarit* stream transformed into *Mārī*, an evident adaptation of the modern Mār;[1] *Siddhapatha*, the modern Sidau, represented as *Siddhādeśa*;[2] the Tīrtha of Mārtāṇḍa regularly referred to by its modern name *Bhavana* (Bavan), etc.[3]

The work of PRĀJYABHAṬṬA and ŚUKA is inferior in composition even to Śrīvara's Chronicle, and by the increased number of modern local names proves its authors' scant familiarity with the old topography of Kaśmīr. Thus the ancient *Kṛtyāśrama*, the scene of Kalhaṇa's Buddhist legend, i. 131 *sqq.*, figures repeatedly in their narrative as *Kīcāśrama*, i.e., by its modern name Kitsʰhōm.[4] Even the well-known *Rājapurī* is metamorphosed into *Rājavīra* (!), a queer reproduction of the modern *Rajaurī*.[5] The old castle of *Lohara* reappears as *Luhara*, an evident approach to the present Lŏhʰrin;[6] the ancient site of *Cakradhara* is turned into *Cakrādhāra*, etc.[7]

It is evident that when Sanskrit ceased to be the language used for official purposes, the knowledge of the ancient names of localities and of the traditions connected with the latter must have become gradually more and more restricted. In view of this decrease of traditional knowledge we have to exercise some caution when utilizing the evidence of the later historical texts for the elucidation of the old topographical data. At the same time it is easy to realize that their help is often of considerable value when connecting links have to be traced between those earlier data and the facts of modern topography.

1 See *Śrīv.* i. 440; iii. 278; comp. note on *Rājat.* iii. 339.
2 *Śrīv.* iii. 354; iv. 203, 661.
3 *Śrīv.* i. 376; iii. 372.
4 See Fourth Chron. 234, 240, 384; compare also note on *Rājat.* i. 147.
5 Fourth Chron. 542, *sqq.*
6 *Ib.*, 134, 143, *sqq.*
7 *Ib.*, 330.

Persian Tārīkhs.

24. It is convenient to refer here briefly to the Persian Tārīkhs of Kaśmīr which to some extent may be looked upon as continuing the works of Kalhaṇa and his Paṇḍit successors. Unfortunately they furnish no material assistance for the study of the old topography of the country.

All these works give in their initial portion an account of the Hindu dynasties which pretends to be translated from the Rājataraṅgiṇī. Yet the abstract so given is in each case very brief and chiefly devoted to a reproduction of the legendary and anecdotal parts of Kalhaṇa's narrative. We thus look in vain in these abstracts for the modern equivalents of those local names, the identification of which is attended with any difficulty.

In illustration of this it may be mentioned that even the Tārīkh of Ḥaidar Malik Cādura (Tsāḍᵘr),[1] which is the earliest work of this class accessible to me and the fullest in its account of the Hindu period, compresses the narrative of Jayasiṁha's reign, filling about two thousand verses in the Rājataraṅgiṇī, into two quarto pages. Of the localities mentioned in the original account of this reign not a single one is indicated by the Muhammadan Chronicler.

The later works—which all belong to the 18th or the present century, are still more reticent on the Hindu period and seem to have largely copied Ḥaidar Malik's abstract. Taking into account the endless corruptions to which local names written in Persian characters are exposed, it will be readily understood why reference to these texts on points of topographical interest yields only in the rarest cases some tangible result.

Kaśmīr poets.

25. It is a fortunate circumstance that several of the older Kaśmīr poets whose works have been preserved for us, have had the good sense to let us know something about their own persons and homes. The topographical details which can be gleaned from these authors, though comparatively few in number, are yet of distinct value. They enable us to check by independent evidence Kalhaṇa's local nomenclature, and in some instances acquaint us with localities of which we find no notice in the Chronicles.

The first and most helpful of these Kaśmīrian authors is the well-known polyhistor Kṣemendra. His works, composed in the second and third quarter of the 11th century, form important landmarks in various fields of Indian literature. Kṣemendra seems to have felt a genuine

1 Written A.H. 1027, i.e., A.D. 1617, in the twelfth year of Jahāngīr's reign. Ḥaidar Malik takes his epithet *Cādura*, recte *Tsāḍᵘr*, from the Kaśmīr village of that name situated in the Nāgām Pargaṇa, some 10 miles south of Śrīnagar, close to the village of Vah⁹tōr.

interest, rare enough among Indian scholars, for the realities of his country and the life around him. He does not content himself with informing us of his family, the date of his works and the places where he wrote them.[1]

In the *Samayamātṛkā*, one of his most original poems, which is intended to describe the snares of courtezans, he gives among other stories an amusing account of the wanderings of his chief heroine, Kaṅkālī, through the length and breadth of Kaśmīr.[2] The numerous places which form the scene of her exploits, can all easily enough be traced on the map. More than once curious touches of true local colour impart additional interest to these references. To Kṣemendra's poem we owe, *e.g.*, the earliest mention of the Pir Pantsāl Pass (*Pañcāladhārā*) and its hospice (*maṭha*).[3] There too we get a glimpse of the ancient salt trade which still follows that route with preference. Elsewhere we see the heroine smuggling herself as a Buddhist nun into the ancient Vihāra of *Kṛtyāśrama*, etc.[4]

A different sketch of topographical interest we owe to the poet Bilhaṇa. He left his native land early in the reign of King Kalaśa (1063–89 A.D.), and after long wanderings became famous as the court poet of the Cālukya king Tribhuvanamalla Parmāḍi in the Dekhan. In the last canto of his historical poem, the *Vikramāṅkadevacarita*, Bilhaṇa gives us a glowing picture of the beauties of the Kaśmīr capital. Notwithstanding its panegyrical character, this account is laudably exact in its local details.[5] In another passage the poet describes to us his rural home and its surroundings at the village of *Khonamuṣa*, south-east of Śrīnagar. His touching verses attest as much his yearning for his distant home as the faithfulness of his local recollections.[6]

[1] Compare the colophons of the various works first discovered and noticed by Prof. Bühler, *Report*, pp. 45 *sqq.* and Appendix.

[2] This humorous peregrination fills the ii. Samaya of the work; see *Kāvyamālā* edition, pp. 6–16. The abundance of curious local details makes a commentated translation of the little Kāvya very desirable, notwithstanding the risky nature of part of its contents. A personal knowledge of Kaśmīr would certainly be required for the task.

[3] See *Samayam.* ii. 90 *sqq.* The *maṭha* on the pass corresponds to the present *'Aliābād Sarai*, a short distance below the top of the pass on the Kaśmīr side; see below, § 44.

[4] *Samayam.* ii. 61 *sqq.*

[5] Prof. Bühler to whom we owe the discovery of Bilhaṇa's chief work, has given in his Introduction an admirable analysis of the contents of Sarga xviii. as illustrating the poet's biography. For his description of contemporary Śrīnagara, see pp. 7 *sqq.*

[6] See *Vikram.* xviii. 70 *sqq.* Prof. Bühler during his Kaśmīr tour, 1875, had the satisfaction of visiting the poet's native place, the present village of *Khuṇmoh*.

Similar in character though less ample in detail, is the description of Kaśmīr and its capital Pravarapura which Mańkha, Kalhaṇa's contemporary, inserts in the iii. Canto of his Kāvya *Śrīkaṇṭhacarita*.[1] Here we have the advantages of a commentary written by Jonarāja, the Chronicler, which duly notices and explains the points of local interest.

The Lokaprakāśa.

26. To complete our review of those Kaśmīrian texts of topographical interest which may be distinguished as secular, we must refer briefly to the curious glossary and manual which goes by the name of *Kṣemendra's Lokaprakāśa*. Professor A. Weber has recently published valuable extracts from this text.[2] I myself have had occasion to refer to it frequently in the notes on the Rājataraṅgiṇī.[3] The work represents a strange mixture of the usual Kośa and a practical handbook dealing with various topics of administration and private life in Kaśmīr.

A great deal of the information contained in it is decidedly old, and probably from the hand of our well-known Kṣemendra. But there are unmistakeable proofs, both in the form and contents of the book, showing that it has undergone considerable alterations and additions down even to the 17th century. This is exactly what we must expect in a work which had remained in the practical use of the Kaśmīrian 'Kārkuns' long after the time when Sanskrit had ceased to be the official language of the country.

The Lokaprakāśa supplies us with the earliest list of Kaśmīr Pargaṇas. It gives besides the names of numerous localities inserted in the forms for bonds, 'Huṇḍīs,' contracts, official reports, and the like which form the bulk of Prakāśas ii. and iv. The Pargaṇa list as well as these forms exhibit local names of undoubtedly ancient date side by side with comparatively modern ones. Some of the latter belong to places which were only founded during the Muhammadan rule.[4]

He could thus verify on the spot every point of the description which Bilhaṇa gives of that "coquettish embellishment of the bosom of Mount Himālaya;" see *Report*, pp. 4 *sqq.*

1 See *Śrīkaṇṭhac.* iii. 10–24, 68 *sqq.*

2 See *Zu Kṣemendra's Lokaprakāśa*, in *Indische Studien*, xviii. pp. 289–412.

3 See particularly Note *H* (iv. 495), on the Kaśmīr monetary system, § 10.

4 Compare, *e.g.*, in Prakāśa ii. *Jainanagara*, founded by Zainu-l-ʿābīdīn (see *Jonar.* 1153); *Alābhadenapura* (*Śrīv.* iv. 318), etc.

Section VI.—The Nīlamata and Māhātmyas.

The Nīlamata-purāṇa.

27. We have already above drawn attention to the fact that Kaśmīr has since early times been pre-eminently a country of holy sites and places of pilgrimage of all kinds. These objects of ancient local worship have always played an important part in the historical topography of the Valley and the adjacent mountain regions. It is hence no small advantage that there are abundant materials at our disposal for the special study of this *Topographia sacra* of Kaśmīr.

The oldest extant text which deals in detail with Kaśmīrian Tīrthas, is the *Nīlamatapurāṇa*. This work which Kalhaṇa used as one of his sources,[1] claims to give the sacred legends regarding the origin of the country and the special ordinances which Nīla, the lord of Kaśmīr Nāgas, had revealed for the worship and rites to be observed in it.[2]

It is unnecessary to refer here to the legends which are related at the commencement of work, and to 'the rites proclaimed by Nīla' which together with the former occupy about two-thirds of the extant text.[3] These parts have been fully discussed by Prof. Bühler in his lucid analysis of the Nīlamata.[4] The remaining portions, however, deserve here special notice as forming,—to use Prof. Bühler's words—"a real mine of information, regarding the sacred places of Kaśmīr and their legends."

In the first place we find there a list of the principal Nāgas or sacred springs of Kaśmīr (vv. 900–975). This is followed by the interesting legend regarding the Mahāpadma lake, the present Volur, which is supposed to occupy the place of the submerged city of *Candrapura* (vv. 976–1008).[5] The Purāṇa then proceeds to an enumeration of miscellaneous Tīrthas chiefly connected with Śiva's worship (vv. 1009–48). To this is attached a very detailed account, designated as *Bhūteśvaramāhātmya*, of the legends connected with the sacred lakes and sites on Mount Haramukuṭa (vv. 1049–1148).[6] Of a similar Māhātmya relating to the Kapaṭeśvara Tīrtha, the present Kōṭhēr,[7] only a fragment is found in our extant text (vv. 1149–68). The list of

1 See *Rājat.* i. 14.

2 Compare *Rājat.* i. 178–184.

3 *Nīlamata*, vv. 1–366, contain the legends, v. 367–899 the rites above referred to.

4 See *Report*, pp 38 sqq.

5 Compare below, § 74, and *Report*, p. 10.

6 Compare below, § 57, and *Rājat.* notes i, 36, 107, 113.

7 See below, § 112, and *Rājat.* i. 32 note.

Viṣṇu-Tīrthas which succeeds it (vv. 1169–1248), is comparatively short, as indeed the position of this god is a secondary one in the popular worship of Kaśmīr.

After a miscellaneous list of sacred Saṁgamas or river-confluences, Nāgas and lakes (vv. 1249–78) we are treated to a somewhat more detailed synopsis of the chief Tīrthas of Kaśmīr (vv. 1271–1371). This is of special interest, because an attempt is made here to describe the Tīrthas in something like topographical order, and to group with them such localities as are visited on the same pilgrimage. It is thus possible to determine, with more certainty than in the case of other Tīrtha lists, the particular holy sites intended by the author.

This synopsis starts in the east with the fountain of the Nīlanāga (Vērnāg), and follows with more or less accuracy the course of the Vitastā and its affluents down to the gorge of Varāhamūla. A short *Vitastāmāhātmya*, describing the origin and miraculous powers of this the holiest of Kaśmīr rivers (vv. 1371–1404), closes the text of Nīlamata, such as it is found in our Manuscripts.

This text is unfortunately in a very bad condition owing to numerous lacunæ and textual corruptions of all kinds. Prof. Bühler held that the Nīlamata in its present form could not be older than the 6th or 7th century of our era.[1] It appears to me by no means improbable that the text has undergone changes and possibly additions at later periods. On the whole, however, the local names found in it bear an ancient look and agree closely with the forms used by Kalhaṇa. The difference in this respect between the Nīlamata and the Māhātmyas, in their extant recensions, is very marked and helps to prove the comparatively late date of most of the latter. On the other hand it deserves to be noted that without the more systematic and detailed accounts of the various Tīrthas as found in the Māhātmyas, the identification of many of the sacred places referred to in the Nīlamata would probably have been impossible.

The fact of all extant copies of the work showing practically the same defective text, seems to indicate that the changes and additions to which I alluded above, cannot be quite recent. If such a revision had been made at a time comparatively near to the date of our oldest MS. we could, after the analogy of other instances, expect an outwardly far more correct, *i.e.* 'cooked,' text. The operation here suggested was actually performed some thirty years ago by the late Paṇḍit Sāhibrām. Receiving the orders of Mahārāja Raṇbīr Singh to

[1] Compare *Report*, p. 40. The oldest and best MS. of the Nīlamata which I was able to secure and collate, is dated in the Laukika year 81. This date judging from the appearance of the MS. probably corresponds to A.D. 1705–6.

prepare the text of the Nīlamata for edition, he 'revised' the work with scant respect for its sacred character by filling up the lacunæ, expanding obscure passages, removing ungrammatical forms, etc.[1] Fortunately Prof. Bühler reached Kaśmīr early enough to learn the origin of this 'cooked' text, and to give due warning as to its true character.

The Nīlamata seems thus to have escaped in recent times that process of continual adaptation which, as we shall see, must be assumed to have greatly affected all extant Māhātmyas. The reason probably is that it could never have been used, like the latter, as a practical pilgrims' manual and itinerary by the Purohitas of the various Tīrthas.

The Haracaritacintāmaṇi.

28. Among the texts dealing specially with the sacred sites of Kaśmīr the *Haracaritacintāmaṇi* can be placed, perhaps, nearest in date to the Nīlamata-purāṇa. It is not like the latter and the Māhātmyas, an anonymous composition, claiming recognition in the wide folds of canonical Purāṇa literature. It owns as its author the poet *Jayadratha*, of the Kaśmīrian family of the Rājānakas, and a brother of Jayaratha. The pedigree of the family as given in Jayaratha's *Tantrālokaviveka*, a Śaiva treatise, shows that Jayadratha must have lived about the end of the 12th or beginning of the 13th century.[2]

His work which is written in a simple Kāvya style, relates in thirty-two Cantos as many legends concerning Śiva and his various Avatāras.[3] Eight of these legends are localized at well-known Kaśmīrian Tīrthas. They give the author ample opportunity of mentioning other sacred sites of Kaśmīr directly or indirectly connected with the former.[4]

Jayadratha's detailed exposition helps to fix clearly the form which the legends regarding some of the most popular of Kaśmīrian Tīrthas had assumed in the time immediately following Kalhaṇa. The local names as recorded by Jayadratha, agree closely with those of the Rājataraṅgiṇī.[5] They prove clearly that the forms employed by Kalhaṇa must have been those generally current in the Sanskrit usage of the period. For the interpretation of Nīlamata's brief notices the Hara-

[1] See *Report*, pp. 33, 38.

[2] Compare Bühler, *Report*, pp. 61, 81, cliii.

[3] The *Haracaritacintāmaṇi* has recently been printed as No. 61 of the *Kāvyamālā* Series, Bombay, (1897), chiefly from the text as contained in my MS. No. 206.

[4] The cantos containing these legends are i. Jvālāliṅgāvatāra, iv. Nandirudrāvatāra, vii. Cakrapradāna; x.-xiv. Vijayeśvara-, Piṅgaleśvara-, Vitastā-, Svayaṁbhunātha-, Kapaṭeśvara Avatāras.

[5] An index of the Kaśmīr local names in the Haracaritacintāmaṇi, with explanatory notes, has been prepared under my supervision by P. Govind Kaul and printed as an Appendix to the Kāvyamālā edition.

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caritacintāmaṇi is of great value. Its plain and authentic narrative enables us often to trace the numerous modifications which the various local legends as well as the names of the localities connected with them have undergone in the extant Māhātmyas.

The Māhātmyas.

29. Reference has already been made above to the numerous texts known as *Māhātmyas* which we possess of all the more important Tīrthas of Kaśmīr. They claim with few exceptions to be extracted from Purāṇas or Purāṇic collections (*Saṁhitās*).[1] Ordinarily they set forth in detail the legends relating to the particular pilgrimage place, the spiritual and other benefits to be derived from its visit, and the special rites to be gone through by the pilgrims at the various stages of the itinerary. The abstract given of the S'āradāmāhātmya in Note *B*, on Rājat. i. 37, may serve to indicate the manner in which these subjects are usually treated in the average texts of this class.

Prof. Bühler was the first to recognize the value of the Māhātmyas for a systematic study of the old topography of Kaśmīr. Among the Sanskrit Manuscripts which he acquired during his tour in Kaśmīr, there are sixteen distinct texts of this kind.[2] My own search in this direction, facilitated by successive visits to the various Tīrthas themselves, has enabled me to collect altogether fifty-one separate Māhātmya texts. The list of my collection which has been given in a supplementary Note,[3] may be considered fairly to exhaust the present range of this literature.

In extent the Māhātmyas vary greatly. By the side of texts like the *Vitastāmāhātmya* with its fifteen hundred S'lokas, we have legendaries of more modest dimensions amounting only to a few dozens of verses. Equally marked differences in the matter of age become apparent on closer examination.

Unmistakeable indications prove that many of the Māhātmyas now in actual use are of late composition or redaction. Among the texts so characterized, the Māhātmyas of some of the most popular pilgrimage places, like the Haramukuṭa lakes, the cave of Amaranātha, Īśeśvara (Iśᵊbar), are particularly conspicuous. The indications here referred to are furnished chiefly by the local names which in their very form often betray a modern origin. This may conveniently be illustrated by a

[1] Most of the Kaśmīr Māhātmyas allege to be portions of the *Bhṛṅgīśasaṁhitā*. Others claim special authority by representing themselves as parts of the Ādi, Brahma, Brahmavaivarta, Varāha and Bhaviṣyat Purāṇas.

[2] See *Report*, pp. iv. *sqq*. Nos. 48, 51, 52, 55, 62, 75, 82, 84, 99, 100 there quoted as separate texts are only chapters of the *Amaranāthamāhātmya*.

[3] See Supplementary Note *AA*.

brief analysis of the most instructive of such names found in the *Vitastāmāhātmya*.

This text claims to furnish an account of all the Tīrthas along the course of the holy river and is designated as a portion of the *Bhṛṅgīśa-saṁhitā*. Notwithstanding this pretended antiquity we find the famous Nīlanāga introduced to us by the name of *Viranāga* (i. 58; ii. 33). This form is wholly unknown to the Nīlamata, Rājataraṅgiṇī or any old text. It is nothing but a clumsy rendering of the modern name of the village *Vērnāg* near which this fine spring is situated.[1] The ancient site of *Jayavana*, mentioned by Bilhaṇa and Kalhaṇa, the present *Zevan*, is metamorphosed into *Yavanī* (vi. 4).[2] The village of Pāndrēṭhan which derives its name from *Purāṇādhiṣṭhāna*,[3] 'the old capital,' and bears the latter designation even in Śrīvara's Chronicle, figures as *Pādadṛṣṭika* (!), xii. 24. That *Mākṣikasvāmin* (Māy[e]sum)[4] and the *Mahāsarit* (Mār)[5] appear as *Māyāsīmā* and *Mārī*, can after this specimen of fancy nomenclature scarcely surprise us.

But we must all the same feel somewhat startled when we find that this text which claims to be revealed by Śiva, refers repeatedly to the modern village of Shāḍ[i]pūr, at the confluence of the Vitastā and Sind, by the name of *Śāradāpura*. Shāḍ[i]pūr, an abbreviation for Shahābuddīn-pūr, was, as Jonarāja's Chronicle shows, founded only in the 14th century by Sultān Shahābu-d-dīn.[6] Quite on a level with the knowledge of old topography here displayed are many other references to localities, *e.g.*, the mention of the modern garden Shālimār, a creation of the Mughals (Śālamāra), xxi. 39; of the ancient Huṣkapura as *Uṣaḥ-karaṇa*[7] (for Uṣkūr!), xxix. 103, etc.

In several cases these fancy renderings of modern local names are explained by whimsical etymologies which again in due turn give rise to new-fangled legends quite in the style of the old *nidānakathās*.

Similar proofs of modern origin can be traced in several other popular Māhātmyas, though perhaps not with equal frequency. Thus we find in the *Haramukuṭagaṅgāmāhātmya* the name of the sacred mountain itself transformed from *Haramukuṭa* into *Haramukha* (the

[1] The name *Vērnāg* is probably derived from the name of the Pargaṇa *Vēr*, mentioned by Abū-l-Faẓl, ii. p. 370.

[2] See below, § 105.

[3] See *Rājat.* iii. 99 note and below, § 89; also *Śrīv.* iv. 290.

[4] See *Rājat.* iv. 88 note and below, § 99.

[5] Compare *Rājat.* iii. 339–349 note and below, § 65.

[6] See *Jonar.* 409. A popular etymology accepted in good faith by more than one European writer, sees in Shāḍ[i]pūr the 'village of the marriage,' scil. between the Vitastā and Sind Rivers!

[7] Compare *Rājat.* i. 168 note and below, § 124.

present Haramukh),[1] the ancient site of *Bhūteśvara* (Buth'śēr) so well-known to the Rājataraṅgiṇī and all old texts, turned into *Bodheśvara*, etc. In the *Amaranāthamāhātmya* of which there is a comparatively old copy in the Poona collection, we are also treated to *Padṛṣṭi* as the Sanskrit name of Pāndrēṭhan, to *Suśramanāga* (for Ks. *Suśramnāg*) as the name of the lake where the Nāga *Suśravas* of the old legend took up his abode,[2] and the like. Examples of local names similarly perverted in other Māhātmyas will have to be mentioned *passim* in our account below.

It is important to note that by the side of texts like those just mentioned, there are others which on the whole show close conformity with our genuine old sources both in matter of legend and local names.[3] And even in the Māhātmyas which in their present form we have every reason to consider as recent compositions, there is often abundant evidence of the use of earlier materials and traditions.[4] It will be easier to understand the singular discrepancies in the value and character of these texts on examining the peculiar conditions under which they have originated.

Origin and purpose of Māhātmyas.

30. The Māhātmyas are in the first place hand-books for the Purohitas of the particular Tīrthas who have the privilege of taking charge of the pilgrims. They serve the priests as chief authorities for the claims they put forth on behalf of the holiness of their Tīrtha, and for the rewards they promise for its visit. They are also intended to support their directions as to the rites to be observed by the pilgrim, and the route to be taken by him on the journey. It is usual for the Purohitas to recite the Māhātmya for the benefit of their clients in the course of the pilgrimage tour. At the same time its contents are expounded to them by a free verbal rendering in Kaśmīrī.

[1] See below, § 57. The kh at the end of the modern name is due to a phonetic law of Kaśmīrī which requires the aspiration of every final tenuis; see *J. A. S. B.*, 1897, p. 183.

[2] Compare *Rājat.* i. 267 note. The modern Ks. form *Suśramnāg* is the regular phonetic derivative of *Suśravanāga* by which name the lake is designated in the Nīlamata, Haracaritacintāmaṇi, etc.

[3] Among such the Māhātmya collection known as the *Sarvāvatāra* (No. 213 in my list of MSS.), the *Mārtāṇḍamāhātmya* (No. 219), the *Vijayeśvaramāhātmya* (No. 220), may be particularly mentioned. None of these, however, are now known to the local Purohitas, more recent and inferior texts having taken their place.

[4] Thus *e.g.*, the Māhātmya of the present *Iśēbar* (*Iśeśvara*; see Rājat. ii. 134) shows plainly its very recent origin by calling the Tīrtha *Iśavihāra* (a garbled reproduction of Iśēbrōr < Iśeśvara), and by similar blunders. Yet it knows correctly the sacred spring of *Śatadhārā* already mentioned by Kṣemendra.

As but very few of the priests have enough knowledge of Sanskrit to follow the text intelligently, these translations are more or less learned by heart. Often as my manuscripts show, interlinear Kaśmīrī glosses are resorted to in order to assist the reader's memory.

These local priests known now in Kaśmīr as *thān°pạt*[1] (Skr. *sthāna-pati*), are as a rule quite as ignorant and grasping as their confrères, the Pujārīs, Bhōjkīs, etc., of India proper. They are held deservedly in very low estimation by the rest of the Brahman community. That their condition was more or less the same in earlier times too, though their influence and numbers may have been greater, can be safely concluded from more than one ironical allusion of Kalhaṇa.[1] These are the people to whose keeping the Māhātmya texts have always been entrusted. Their peculiar position and calling explain, I think, most of the curious changes which the latter have undergone.

Tenacious as local worship is, there is the evidence of concrete cases to show that not only the route of pilgrimage, but the very site of a Tīrtha has sometimes been changed in comparatively recent times. In proof of this it will suffice to refer to the detailed account I have given of the transfers that have taken place in the case of the ancient Tīrthas of *Bheḍā* and *Śāradā*.[2] Minor modifications must naturally have been yet far more frequent. The visit of a principal Tīrtha is regularly coupled with bathings, Śrāddhas and other sacrificial functions at a series of other sacred spots. The choice of these subsidiary places of worship must from the beginning have depended on local considerations. As these changed in the course of time, variations in the pilgrimage route must have unavoidably followed.

To bring the text of the Māhātmya into accord with these successive changes was a task which devolved upon the local Purohitas. The texts we have discussed above bear, in fact, only too manifestly the traces of their handiwork. Sound knowledge of Sanskrit and literary culture are likely to have been always as foreign to this class of men as they are at present. When it became necessary for them to introduce the names of new localities into the text of the Māhātmya there was every risk of these names being shown not in their genuine old forms, but in hybrid adaptations of their modern Kaśmīrī equivalents. This risk naturally increased when Sanskrit ceased to be the official language of Kaśmīr, and the knowledge of the old local names was gradually lost even among those maintaining scholarly traditions in the country.

[1] Compare *Rājat.* ii. 132 note and v. 465 *sqq.*; vii. 13 *sqq.*; viii. 709, 900 *sqq.*, 939.

[2] Compare Notes *A* (Rājat. i. 35) and *B* (Rājat. i. 37).

Popular etymology in local names of Māhātmyas.

31. Another potent cause seems to have co-operated in this vitiation of the local nomenclature of the Māhātmyas. I mean 'popular etymology.' We have already referred to the tendency displayed throughout these tracts of making the names of localities, rivers, springs, etc., the starting-point for legendary anecdotes. For men of such very scant knowledge of Sanskrit as the *thānᵃpatⁱs* invariably are, it was naturally far easier to explain such etymological stories when they were based on the modern local names.

It is undoubtedly this reason which has, *e.g.*, led the compiler of the present Haramukuṭagaṅgāmāhātmya to substitude the name *Karaṅkanadī* for the old *Kanakavāhinī*. By the latter name the stream coming from the Haramukuṭa lakes is designated in all our old texts, as explained in my note on Rājat. i. 149–150. By turning Kāṅkᵃnai, the modern derivative of this old name, into *Karaṅkanadī*, 'the skeleton-stream,' the compiler of the Māhātmya gets an occasion to treat his readers to a legend likely to appeal to their imagination. The river is supposed to have received this appellation, because Garuḍa had dropped at its Saṁgama with the Sindhu the skeleton (*karaṅka*) of the Ṛṣi Dadhīci which Indra before had used as his weapon, etc.[1] This story, it is true, is wholly unknown to the Nīlamata or any other old text. But, on the other hand, it has got the great merit of being easily explained and proved to any Kaśmīrī pilgrim. He cannot fail to realize the manifest connection between *Karaṅka* and his familiar *kᵃranz*, 'skeleton.'

An exactly similar case of 'popular etymology' has been noticed in the analysis of the Śāradāmāhātmya as contained in my Note *B* (i. 37). There the name of the village *Sunᵍ-Drang* is reproduced as *Suvarṇārdhāṅgaka* and explained by a legend, how the Muni Śāṇḍilya had at that spot half his body (*ardhāṅgaka*) turned into gold (*suvarṇa*), etc. In reality the village name is derived from the old term *Draṅga*, 'watch-station,' by which the place is mentioned by Kalhaṇa.[2] The distinguishing prefix *Sunᵍ-*, meaning 'gold' in Kaśmīrī, was given to it, because it lay on the route to the old gold-washing settlements in the Kiṣangaṅgā Valley.[3]

[1] The story is spun out at great length in Paṭala iii. of the *Haramukuṭagaṅgāmāhātmya*, MS. No. 221.

[2] See viii. 2507, 2702.

[3] For other examples of local names in Māhātmyas metamorphosed for the above reason, compare my notes Rājat. vi. 177 (*Bhīmadvīpa* in the Mārtāṇḍamāh., for Bumᵍzu); i. 267 (*Śeṣanāga* in the Amareśvaramāh., for the older *Suśramanāga*, recte *Suśravonāga*); Note *C*, i. 124 (*Jyeṣṭheśvara*, the present Jyēṭhēr, turned into a site of Jyeṣṭhā), etc.

It would be easy to multiply examples showing the strange vicissitudes to which old topographical names are exposed at the hands of the local Purohita. But the explanations already given will suffice to prove that the topographical data found in Māhātmyas can only then be used safely when they are critically sifted and supported by our more reliable sources.

A critical examination of these data is, however, much impeded by the difficulty we experience in fixing the exact age of particular Māhātmyas and their component portions.[1] Even in the case of apparently old texts modern additions and changes may be suspected, while again the most recent concoctions may preserve fragments of genuine tradition.[2] In view of these considerations I have not thought it safe to crowd my maps with hundreds of names of petty Tīrthas as found in the Māhātmyas, but have marked only those pilgrimage sites the ancient names of which can be established with certainty.

[1] The difficulty here indicated is increased by the fact that no really old manuscripts of Māhātmyas seem to be preserved in Kaśmīr. MSS. written on birch-bark, i.e., earlier than the 17th century, are quite unknown at present. Of the numerous paper MSS. I have examined, none seem to me older than two centuries at the utmost. It is probable that this absence of older copies is due to the rough usage to which Māhātmya MSS. are exposed when carried about on the pilgrimage tours.

[2] I am glad that chance gave me an opportunity of gaining some personal experience of the manner in which Māhātmyas are occasionally produced. Some ten years ago the Purohitas or Bīchbaṭṭas of the Gan^{a}patyār quarter in S'rīnagar recovered an ancient Liṅga from a Mosque and began to erect a small shrine for it near the river Ghāṭ of Mal^{a}yār. Guided by a local tradition which, as far as I can judge, may be genuine, they believed this to have been the site of the shrine of S'iva *Vardhamāneśa* mentioned already in the Rājataraṅgiṇī (see note ii. 123). The Liṅga was re-consecrated accordingly by this name.

In 1891, when examining old sites in this part of the city, I also visited the temple of Vardhamāneśa then under construction. The interest I showed in the old Liṅga and in the tradition regarding it, coupled with an appropriate Dakṣiṇā, soon secured me the confidence of the head-Purohita of the little shrine. 'Paṇḍit' T.R., a man more intelligent than the average of his fraternity, was not slow to confess to me that the Māhātmya of the Tīrtha *in spe* was as yet under preparation. Some weeks later when in camp near S'rīnagar, I received the visit of my Purohita from Vardhamāneśa's shrine. He brought me the draft of the new Māhātmya and asked my assistance in revising it.

I found it to consist chiefly of extracts from the Vitastāmāhātmya. The passages dealing with Vardhamāneśa and the neighbouring Tīrthas within the city had been suitably amplified with laudatory verses in the usual Māhātmya style culled from other texts. The vested interests of other local shrines had received due recognition by being included in the *Yātrā* of Vardhamāneśa. I did what I could to indicate the genuine names of these localities. This quasi-antiquarian co-operation does not seem to have detracted from the popularity of the new Māhātmya among the Bīchbaṭṭas of Gan^{a}patyār.

Abū-l-Faẓl's account of Tīrthas.

32. It is a curious fact that among our authorities for the *Topographia sacra* of Kaśmīr we must allow a conspicuous place to a Muhammadan writer. It is ABŪ-L-FAẒL, the minister of Akbar, who in the chapter of his Āīn-i Akbarī dealing with the 'Sarkār of Kashmīr' has left us a very accurate account of many of the holy places in the Valley.[1] Abū-l-Faẓl's detailed description of Kaśmīr is valuable in many respects to the historical student. But it is particularly in connection with our topographical search that we must feel grateful to the author for having like his great master "caught some of the enthusiasm of the Valley" (Rennell).

Abū-l-Faẓl tells us that "the whole country is regarded as holy ground by the Hindu sages." He also refers in general terms to the numerous shrines dedicated to the various deities and to the popular worship of 'snakes,' *i.e.*, the Nāgas, "of whom wonderful stories are told." He then proceeds to describe in detail the most notable sites, giving among these particular prominence to what Dr. Bernier aptly called 'les merveilles' of the country.

This account of Abū-l-Faẓl represents for us an authentic survey of all the Kaśmīrian Tīrthas that were well-known and popular at the end of the 16th century. It serves as a most useful link between our older texts dealing with these pilgrimage places and the modern tradition. It helps us to check the data of the Māhātmyas in many particulars of topographical interest. Abū-l-Faẓl's notes have enabled me to trace in more than one instance the position of ancient Tīrthas or particular features regarding them which have since his time been wholly forgotten.[2] It cannot be doubted that Abū-l-Faẓl's list of sacred sites to which we have to refer so frequently in our subsequent notes, was supplied by competent Brahman informants just as his abstract of the Sanskrit Chronicles.

[1] Vol. i. pp. 564–570 in Prof. Blochmann's edition of the *Āīn-i Akbarī*; vol. ii. pp. 354–366 in the Bibliotheca Indica translation of the work (Col. H. S. Jarrett). Abū-l-Faẓl's account of Kaśmīr would well deserve a fuller commentary than the one which the translator, in the absence of special local studies, was able to give. The account of Mīrzā Ḥaidar (in the Tārīkh-i Rāshidī) and Bernier's notes could conveniently be discussed on the same occasion.

[2] Compare my notes on *Bheḍagiri* (i. 35), the *Śāradātīrtha* (i. 37), the *Takṣakanāga* (i. 220); also supplementary note to i. 107.

Section VII.—Local tradition.

Local tradition of the learned.

33. It now remains for us only to indicate briefly what help surviving tradition offers for the study of the ancient topography of Kaśmīr. The tradition with which we are here concerned, presents itself in two forms. One is the tradition of the 'learned,' regarding the ancient sites of the country in general, kept up more or less in connection with written records. The other is that genuine local tradition which is strictly confined in its limits but is kept up equally among literate and illiterate of particular places.

Among those who represent in Kaśmīr learned tradition of the former type there must again be distinguished the few Paṇḍit families of S'rīnagar in which the serious study of Sanskrit S'āstras has been maintained, and the great host of 'Bāchbaṭṭas.' With the latter class we have already become partially acquainted in the course of our examination of the Māhātmyas. We have had occasion to note the conspicuous absence of genuine knowledge as regards the ancient topography of the country in those texts which form the characteristic products of this class' literary activity.

The Purohitas' knowledge of Sanskrit is ordinarily of the scantiest kind, and their 'reading' confined to Māhātmyas and devotional texts learned by heart without proper comprehension. We can hence scarcely expect them to have preserved genuine traditions regarding those historically interesting localities which are mentioned only in the Chronicles. It is only in the matter of those sacred sites, pilgrimage routes and the like which form as it were, their own particular professional domains, that their testimony can claim special attention. Yet even in this limited field the Purohitas' traditions are, as we have seen, often of a very modern growth. Their statements, therefore, require under all circumstances to be tested with critical caution.

Sāhibrām's Tīrtha-saṅgraha.

34. 'Learned' tradition as represented by the S'rīnagar Paṇḍits of modern times, is best guaged by an examination of what the late Paṇḍit Sāhibrām († 1872) has specially recorded on the subject of ancient sites.

P. Sāhibrām who was undoubtedly the foremost among Kaśmīrian Sanskrit scholars of the last few generations, had been commissioned by the late Mahārāja Raṇbīr Singh to prepare a descriptive survey of all ancient Tīrthas of Kaśmir. For this purpose a staff of Paṇḍits was placed at his disposal whose business it was to collect the necessary

materials in the various parts of the country. The large work which was to be prepared on the basis of these materials, was never completed, and of the latter themselves I was able to recover only small portions.[1] But some time before his death Paṇḍit Sāhibrām had drawn up abstracts of the information he had collected under the title of *Kāśmīratīrthasaṁgraha*, and of these I have been also able to obtain copies. The most detailed and apparently latest recension of this Tirthasaṁgraha is the one contained in No. 61 of Prof. Bühler's collection of MSS. now at Poona.

This little work gives a list of numerous Tīrthas with brief indications of their special features and position, arranged in the topographical order of Parganas. It is useful enough as a comprehensive synopsis of such sacred sites as were known at the time to local worship. The references to many obscure little shrines, Nāgas, etc., show that the enquiries of Paṇḍit Sāhibrām's assistants had been extensive. But the work proves at the same time how little help traditional learning in Kaśmīr could offer in our days for the serious study of the old topography of the Valley.

Paṇḍit Sāhibrām's plan is to indicate each Tīrtha's position by mentioning the territorial division in which it is situated, as well as the nearest village or other well-known locality. It was undoubtedly the learned author's desire to give all local names in their old Sanskrit forms as far as they were known to him. Accordingly we find a number of localities correctly mentioned by their genuine old designations. But unfortunately the number of the latter is truly insignificant when compared with those local names which are plainly recognizable as new fabrications, as worthless as those already mentioned in connections with the topography of the modern Māhātmyas.

In consideration of the fact that P. Sāhibrām deserves to be looked upon as the best representative of modern Kaśmīrian scholarship,[2] it is only just to illustrate the above remarks by a few examples. I take them only from among those local names the genuine forms of which can be easily ascertained from the Rājataraṅgiṇī. The lake of the Nāga *Suśravas*,[3] the present Suśram Nāg, is named *Suśramanāga* in one

[1] The papers acquired by me refer to some of the north-eastern Parganas and contain descriptions (in Sanskrit) of the various Nāgas, Liṅgas, etc., the miraculous stories relating to them, together with the devotional texts which are supposed to be used at their worship. Quaint illustrations and maps accompany the text. The whole forms a large-sized folio. The critical value of these records is very slight.

[2] See Prof. Bühler's *Report*, pp. 4, 38.

[3] See *Rājat.* i. 267 note, and below, § 59.

recension and *Suṣumṇanāga* (*!*) in the other. The old Pargaṇas of *Holaḍā*, *Laulāha*, *Khūyāśrama* are turned on account of their modern names Vular, Lōlau, Khuyᵍhōm, into the 'Rāṣṭras' of *Volara*, *Lalava*, *Khoyahāma*. Bānᵃhāl, the old *Bāṇaśālā*,[1] figures as *Bhānuśālā*; Khruv, the ancient *Khaḍūvī*,[2] known correctly even to so late a text as the Lokaprakāśa, as *Khrāva*. The well-known Khonamuṣa (Khunᵍmoh) appears as *Kṣuṣṇamoṣagrāma* (*!*) The name of the ancient village *Jayavana*[3] which fares badly too, as we have seen, in the Māhātmyas, is metamorphosed into *Jīvana*; *Raṇyil*, the old *Hiraṇyapura*,[4] is with a flight of historical fancy turned into a foundation of king Raṇāditya (!).

Even the sacred Tirtha of *Tūlamūlya* (Tulᵍmul) does not escape a renaming as *Sthūlamūla*, though in this case the local Māhātmya, with its *Tūlamūla*, keeps close enough to the old name.[5] After this, village names like *Uṣkara*, *Rāmāśrama*, *Kīcakāśrama*, as designations of the old *Huṣkapura*, *Rāmuṣa*, *Kṛtyāśrama* can scarcely surprise us.[6] The number of districts, towns, villages, streams, lakes and other topographical features (exclusive of Tīrthas) mentioned by Paṇḍit Sāhibrām amounts to nearly three hundred. But scarcely two dozens of the names given for them are in accord with our old authorities.

Paṇḍit Sāhibrām was one of the few modern Kaśmīrian scholars who have seriously occupied themselves with the Rājataraṅgiṇī and the later Chronicles. This is shown by the elaborate abstracts he had prepared of these works.[7] Hence the indifferent knowledge of ancient topography as displayed in his Tīrthasaṁgraha, must appear all the more striking. Yet in reality it is easily enough accounted for.

What knowledge learned tradition in Kaśmīr has retained of ancient sites as distinct from Tīrthas and the like, is confined to a few prominent localities which, for one reason or the other, were of special interest to the Paṇḍits. Thus the capital *Pravarapura-Śrīnagara* with several of its quarters, *Vijayeśvara*, *Suyyapura*, *Varāhamūla*, *Padmapura*, and some other places of importance in the Valley have continued to be known by their ancient names. This was probably because these names never ceased to be employed in colophons of Sanskrit manuscripts, in horoscopes, and similar records. In the case of a

[1] See note viii. 1665, and below, § 41.

[2] See note viii. 733; also § 105 below.

[3] Compare note vii. 607, and § 105 below.

[4] See note i. 287, and § 104 below.

[5] Compare note iv. 638.

[6] See notes i. 168; ii. 55; i. 147.

[7] These abstracts, called *Rājataraṅgiṇīsaṁgraha*, were acquired by Prof. Bühler; see Nos. 176–8 of the Poona collection. It deserves to be noted that in them no attempt whatever is made to explain points of topographical interest.

few other localities again like *Jayapura*, *Dāmodara's Uḍar*, *Cakradhara*, there were well-known popular legends which plainly indicated their identity with sites mentioned in the Rājataraṅgiṇī. But for the great mass of ancient places there were no special reasons of this kind to assure a recollection of their old names. It is hence only natural that all genuine knowledge of their identity and earlier history has gradually disappeared from the Paṇḍits' tradition.

Nothing but systematic enquiry on the lines of modern historical research could help towards a recovery of the knowledge thus lost. But such an enquiry could not be expected either from P. Sāhibrām or any other indigenous scholar uninfluenced by Western critical methods.

Popular local tradition.

35. Popular local tradition has fortunately in Kaśmīr proved far more tenacious than the tradition of the learned. I have often derived from it valuable aid in my local search for particular sites. My antiquarian tours have given me ample opportunity to convince myself that when collected with caution and critically sifted, such local traditions can safely be accepted as supplements to the topographical information of our written records. In illustration of this statement I may refer to the evidence gathered from local tradition in reference to the sites of *Lohara*,[1] *Hastivañja*,[2] *Kramavarta*,[3] *Jayapura*,[4] *Skandabhavana*,[5] etc.

In more than one instance it can be shown that local legends which Kalhaṇa heard, still cling unchanged to the same sites. As striking examples may be mentioned here the legends concerning *Dāmodara's Uḍar*,[6] the burned city of King *Nara*,[7] the temple of *Pravareśa*.[8]

It cannot be doubted that this tenacity of local tradition in Kaśmīr is due largely to the isolation secured for the country by its alpine position. Nothing is more instructive in this respect than a comparison with the territories of ancient Gandhāra and Udyāna, or with the Panjāb plains. These regions so rich in ancient Hindu sites are particularly devoid of local traditions connected with them. This fact is easily understood if we think of the many and great ethnic changes which

1 See Rājat. Note *E* (iv. 177), § 15.
2 See Rājat. note i. 302, and *J. A. S. B.*, 1895, pp. 379 *sq.*
3 Compare Note *D* (iii. 227); *J. A. S. B.*, 1895, pp. 384 *sq*; also below, § 43.
4 See note iv. 506 *sqq.*, and below, § 122.
5 See Note *K* (vi. 137).
6 See note i. 156; below, § 119.
7 See note i. 202; below, § 108.
8 See note iii. 350; below, § 96.

have passed over the land. Kaśmir, fortunately for antiquarian research, throughout its known history has escaped such great convulsions and the breaks of tradition usually connected with them.

The influence of the geographical position of Kaśmir can be traced here also in another direction. Mountainous surroundings and consequent isolation tend everywhere in alpine countries to develop and foster conservative habits of life and thought. We find these habits most strongly marked in the population of the valley, and may safely ascribe to them a great share in the preservation of local traditions.

CHAPTER III.

GENERAL GEOGRAPHY.

Section I.—Position and configuration of Kaśmīr Valley.

The name Kaśmīra.

36. Nature itself when creating the great Valley of Kaśmīr and its enclosing wall of mountains, seems to have assured to this territory not only a distinct geographical character but also a historical existence of marked individuality. We see both these facts illustrated by the clearly defined and constant use of the name which the territory has borne from the earliest accessible period.

This name, Kaśmīra in its original Sanskrit form, has been used as the sole designation of the country throughout its known history. It has uniformly been applied both by the inhabitants and by foreigners. We can trace back its continued use through an unbroken chain of documents for more than twenty-three centuries, while the name itself undoubtedly is far more ancient. Yet notwithstanding this long history the current form of the name down to the present day has changed but slightly in the country itself and scarcely at all outside it.

The Sanskrit *Kaśmīra* still lives as *Kaśmīr* (in Persian spelling *Kashmīr*) all through India and wherever to the West the fame of the Valley has spread. In the language of the inhabitants themselves the name is now pronounced as *Kaśīr*.[1] This form is the direct phonetic derivative of *Kaśmīr*, with regular loss of the final vowel and assimila-

[1] The adjective *Kā'śur* 'Kaśmīrian' corresponds to Skr. *Kāśmīra*. The *u* of the last syllable is probably due to the *v* of an intermediate form * Kāśvīra; see below.

tion of *m* to the preceding sibilant. With reference to a phonetic rule, prevalent through all Indo-Aryan Vernaculars, which favours the change of medial Skr. *m* into *v*,[1] we are led to assume an intermediate Prakrit form **Kaśvīr[a]*. In support of this we may point to the striking analogy of the Kaśmīr local name *Sāngas* which, as shown in my note on Rājat. i. 100, goes back through an older recorded form *Svāngas* to **Smāṅgāsā*, the *Samāṅgāsā* of the Chronicle. It has already been shown above that we have to recognize in this **Kaśvīra* the original Prakrit form which Ptolemy's Κάσπειρα, Κασπειρία (pronounced Kaspīra, Kaspīria) are intended to transcribe.[2]

Etymologies of name.

Linguistic science can furnish no clue to the origin of the name *Kaśmīra*, nor even analyze its formation.[3] This fact, however, has not saved the name from being subjected to various etymological guesses which for curiosity's sake may receive here a passing notice. It must be held to the credit of Kaśmīrian Sanskrit authors that their extant writings are wholly innocent of this display of etymological fancy.

No less illustrious a person than the Emperor Bābar opens the list. His suggestion was that the name may be derived from the hill-tribe '*Kās*' living in the neighbourhood of Kaśmīr.[4] We easily recognize here the reference to the *Khaśas* of the lower hills. Their name, however, in its true form has, of course, no connection with Kaśmīr. Another etymology, first traceable in the Ḥaidar Malik's Chronicle and hence reproduced by other Muhammadan writers,[5] derives the first part of the name from '*Kashap*,' *i.e.*, Kaśyapa, and the second either from

[1] Compare Dr. Grierson's remarks, *Z. D. M. G.*, l. p. 16.

[2] See above, § 5.

[3] If the Uṇādisūtra, 472, *Kaśeḥ muc ca* is to be applied to the word *Kaśmīra*, the latter would have to be dissolved into *kaś-m-īra* according to the traditional grammatical system.

[4] See *Memoirs of Baber, transl. by Leyden and Erskine*, p. 313. A Persian MS.: of the text adds that *mīr* signifies mountain. Erskine, *Introduction*, p. xxvii., improves upon this etymology by extending it to Kashgar, the Casia regio and Casii Montes of Ptolemy. Ritter, *Erdkunde*, ii. p. 1127, from whom I take this reference, not unjustly queries why the learned editor should have stopped short of the *Caspium mare* and other equally manifest affinities.

Babar's conjecture figures still seriously in a note of the latest translation of the Aīn-i Akbarī, ii. p. 381.

Regarding the name and habitation of the *Khaśas*, compare *Rājat.* i. 317 note.

[5] It was first introduced to the European reader by Tieffenthaler's extract from Ḥaidar Malik's Chronicle compare *Description historique et géographique de l' Inde*, ed. Bernouilli (1786), i. p 79 (also p. 89 as to source). Compare also Wilson, *Essay*, p. 94, for a similar note from the *Wāqi'āt-i Kashmīr* of Muḥammad 'Aẓīm; here كشف سر is a clerical error for كشف مير.

Ks. *mar*, *i.e.*, Skr. *maṭha* 'habitation,' or a word *mír*, supposed to mean 'mountain.'[1]

It was, perhaps, a belief that this whimsical etymology represented some local tradition, which induced even so great a scholar as Burnouf to risk the conjectural explanation of Kaśmīra as **Kaśyapamīra*, *i.e.*, 'the sea of Kaśyapa.'[2] There is neither linguistic nor any other evidence to support this conjecture. It would hence scarcely have been necessary to refer to it had it not on the authority of a great name found its way also into numerous works of a more general character.[3]

Extent and position of Kaśmīr.

37. Just as the name Kaśmīr has practically remained unchanged through the course of so many centuries, so also has the territorial extent of the country which it designated. This has always been confined to the great valley drained by the headwaters of the Vitastā and to the inner slopes of the ring of mountains that surround it.

The natural limits of the territory here indicated are so sharply marked that we have no difficulty in tracing them through all our historical records, whether indigenous or foreign. Hiuen Tsiang, Ou-k'ong and Albērūnī's accounts, as we have seen, show them clearly enough. Kalhaṇa's and his successors' Chronicles prove still more in detail that the Kaśmīr of Kaśmīrian tradition never extended materially beyond the summit-ridges of those great ranges which encircle and protect the Valley.

A detailed description of the geographical position of Kaśmīr does not come within the scope of this paper. Nor is it needed since there is an abundant modern literature dealing with the various aspects of the geography of the country. For an accurate and comprehensive account I may refer to the corresponding portion of Mr. Drew's work and to the graphic chapter which Mr. Lawrence devotes to the description of the Valley.[4] It will, however, be useful to allude here briefly to some of the characteristic features in the configuration of the country which have an important bearing on its ancient topography.

Kaśmīr owes its historical unity and isolation to the same facts which give to its geographical position a distinct and in some respects

[1] The Ks. word *mar* < Skr. *maṭha*, is in common use in the country as the designation of Sarais, shelter-huts on passes, etc. *Mír* might have been connected by Ḥaidar Malik's Paṇḍit informants with the name of Mount *Meru* or with *mīra*, meaning according to a Kośa *parvataikadeśa*, see *B. R.*, s. v.

[2] Compare his note in Humboldt, *L'Asie centrale*, i. p. 92.

[3] See, *e.g.*, Lassen, *Ind. Alt.*, i. p. 54 note; McCrindle, *Ancient India as described by Ptolemy*, p. 108; V. de St. Martin, *Mém. de l' Acad. des Inscript., Sav. E'trang.*, v., ii. p. 83; Kiepert, *Alte Geographie*, 1878, p. 36.

[4] See F. Drew, *The Jummoo and Kashmir Territories*, 1875, Chapters viii.–x.; W. Lawrence, *The Valley of Kasmir*, 1895, pp. 12–39.

almost unique character. We have here a fertile plain embedded among high mountain ranges, a single valley large enough to form a kingdom for itself and capable of supporting a highly developed civilization. Its height above the sea, nowhere less than 5000 feet, and its peculiar position assure to it a climate equally free from the heat of India and the rigours of cold, peculiar to the higher mountain regions in the north and east.

The form of the country has been justly likened to a great irregular oval, consisting of a similarly shaped level vale in the centre and a ring of mountains around it. The low and more or less flat part of the country measures about 84 miles in length, from south-east to north-west, while its width varies from 20 to 25 miles. The area comprised in this part has been estimated at 1800 or 1900 square miles.[1] Around this great plain rise mountain ranges which enclose it in an almost unbroken ring. Their summit lines are everywhere but for a short distance at the southernmost point of the oval, more than 10,000 feet above the sea. For the greatest part they rise above 13,000 feet, while the peaks crowning them tower up to altitudes close on 18,000 feet. Reckoned from the summit lines of these ranges, the length of the irregular oval enclosed by them is about 116 miles, with a varying width from 40 to 75 miles. The whole area within these mountain boundaries may be estimated at about 3,900 square miles.

The slopes of the mountains descending towards the central plain are drained by numerous rivers and streams all of which join the Vitastā within the Kaśmīr plain. The side-valleys in which these tributaries flow, add much ground to the cultivated area of the country several of them being of considerable length and width. But even the higher zones of the mountain-slopes where cultivation ceases, add their share to the economical wealth of the country. They are clothed with a belt of magnificent forests, and above this extend rich alpine pastures, close up to the line of perpetual snow.

In the great mountain-chain which encircles the country, there is but one narrow gap left, near to the north-west end of the Valley. There the Vitastā after uniting the whole drainage of Kaśmīr flows out by the gorge of Bārāmūla (Varāhamūla) on its course towards the sea. For a distance of nearly 200 miles further this course lies through a very contracted valley which forms a sort of natural gate to Kaśmīr. It is here that we find the old political frontier of Kaśmīr extending beyond the mountain-barriers already described. For about 50 miles below the Varāhamūla gorge the narrow valley of the Vitastā was held in Hindu times as an outlying frontier tract of Kaśmīr.[2]

1 Compare DREW, *Jummoo*, p. 162, for this and subsequent statements.

2 See below § 53.

Legend of Satīsaras.

38. The general configuration of the country here indicated in its broadest outlines may be held to account for the ancient legend which represents Kaśmīr to have been originally a lake. This legend is mentioned by Kalhaṇa in the Introduction of his Chronicle and is related at great length in the Nīlamata.[1]

According to this earliest traditional account the lake called *Satīsaras*, 'the lake of Satī (Durgā),' occupied the place of Kaśmīr from the beginning of the Kalpa. In the period of the seventh Manu the demon Jalodbhava ('water-born') who resided in this lake, caused great distress to all neighbouring countries by his devastations. The Muni Kaśyapa, the father of all Nāgas, while engaged in a pilgrimage to the Tīrthas in the north of India, heard of the cause of this distress from his son Nīla, the king of the Kaśmīr Nāgas. The sage thereupon promised to punish the evil-doer and proceeded to the seat of Brahman to implore his and the other gods' help for the purpose. His prayer was granted. The whole host of gods by Brahman's command started for Satīsaras and took up their position on the lofty peaks of the *Naubandhana Tīrtha* above the lake Kramasaras (Kōnsᵃr Nāg). The demon who was invincible in his own element, refused to come forth from the lake. Viṣṇu thereupon called upon his brother Balabhadra to drain the lake. This he effected by piercing the mountains with his weapon, the ploughshare. When the lake had become dry, Jalodbhava was attacked by Viṣṇu and after a fierce combat slain with the god's war-disc.

Kaśyapa then settled the land of Kaśmīr which had thus been produced. The gods took up their abodes in it as well as the Nāgas, while the various goddesses adorned the land in the shape of rivers. At first men dwelt in it for six months only in the year. This was owing to a curse of Kaśyapa, who angered by the Nāgas had condemned them to dwell for the other six months together with the Piśācas. Accordingly men left Kaśmīr for the six months of winter and returned annually in Caitra when the Piśācas withdrew. Ultimately after four Yugas had passed, the Brahman Candradeva through the Nīlanāga's favour acquired a number of rites which freed the country from the Piśācas and excessive cold. Henceforth Kaśmīr became inhabitable throughout the year.

The legend of the desiccation of the lake is alluded to also by Hiuen Tsiang, though in another, Buddhistic form.[2] Its main features as related in the Nīlamata, live to this day in popular tradition. They

1 See *Rājat.* i. 25–27; *Nilamata*, vv. 26–237. A detailed extract of the Nīlamata's story has been given by Prof. Bühler, *Report*, p. 39.

2 See *Si-yu-ki*, transl. Beal, i. p. 149.

are also reproduced in all Muhammadan abstracts of the Chronicle.[1] From Ḥaidar Malik's Tārīkh the legend became known to Dr. Bernier who prefaces with it his description of the 'Paradis terrestre des Indes.'[2] It has since found its way into almost every European account of Kaśmīr.

Lacustrine features of Valley.

It is probable that this legend had much to do with drawing from the first the attention of European travellers to certain physical facts apparently supporting the belief that Kaśmīr was in comparatively late geological times wholly or in great part occupied by a vast lake. But few seem to have recognized so clearly as the late Mr. Drew, the true relation between the legend and the above facts. I cannot put his view which from a critical point of view appears to be self-evident, more clearly than by quoting his words: "The traditions of the natives—traditions that can be historically traced as having existed for ages—tend in the same direction, [*viz.*, of the Vale having been occupied by a lake,] and these have usually been considered to corroborate the conclusions drawn from the observed phenomena. Agreeing, as I do, with the conclusion, I cannot count the traditions as perceptibly strengthening it; I have little doubt that they themselves originated in the same physical evidence that later travellers have examined."[3]

The geological observations upon which modern scientific enquirers like Mr. Drew and Colonel Godwin Austin, have based their belief as to the former existence of a great lake, are mainly concerned with the undoubted 'lacustrine deposits' found in the so-called Uḍars or Karēwa plateaus to be noticed below. But it seems to me very doubtful whether we can reasonably credit the early Kaśmīrians with a correct scientific interpretation of such geological records. It appears far more probable that the legend was suggested by an observation of the general form of the valley and by a kind of natural inference from the historical changes in the country's hydrography.

We shall see below that great drainage operations took place at various periods of the country's history which extended the cultivated ground and reduced the area covered by lakes and marshes. To any one, however ignorant of geology, but acquainted with the latter fact, the picture of a vast lake originally covering the whole Valley might naturally suggest itself. It would be enough for him to stand on a hill-side somewhere near the Volur, to look down on the great lake and the adjoining marshes, and to glance then beyond towards that narrow gorge

[1] Compare, *e.g.*, *Āīn-i Akb.*, ii. p. 380; Wilson, *Essay*, p. 93.

[2] See Bernier, *Travels in the Mogul Empire*, ed. Constable, p. 393.

[3] See *Jummoo*, p. 207.

of Bārāmūla where the mountains scarcely seem to leave an opening. It is necessary to bear in mind here the singular flights of Hindu imagination as displayed in the Purāṇas, Māhātmyas and similar texts. Those acquainted with them, will, I think, be ready to allow that the fact of that remarkable gorge being the single exit for the drainage of the country, might alone have sufficed as a starting-point for the legend.

In respect of the geological theory above referred to it may yet be mentioned that in the opinion of a recent authority "even the presence of true lacustrine deposits does not prove that the whole of the Kaśmīr lake basin was ever occupied by a lake."[1] At the present day true lacustrine deposits are still being formed in the hollows of the rock basin represented by the lakes of the north-west portion of the Valley. It is held probable "that the conditions have been much the same as at present, throughout the geological history of the Kaśmīr Valley," only a minor area of the latter having at various periods been occupied by lakes.

Whatever view may ultimately recommend itself to geologists, it is certain that the lacustrine deposits of Kaśmīr, though of no remote date, speaking by a geological standard, are far older than any monuments of man that have yet been discovered.[2] Mr. Drew was undoubtedly right in denying the existence of lacustrine deposits round any known ancient buildings or other works of man in the Valley.

Kaśmīr defended by its mountains.

39. None of the natural features of Kaśmīr geography have had a more direct bearing on the history of the country than the great mountain-barriers that surround it. They may hence rightly claim our first consideration.

The importance of the mountains as the country's great protecting wall has at all times been duly recognized both by the inhabitants and foreign observers. Since an early time Kaśmīrians have been wont to pride themselves on their country's immunity from foreign invasion, a feeling justified only by the strength of these natural defences. We find it alluded to by Kalhaṇa who speaks of Kaśmīr as unconquerable by the force of soldiers and of the protection afforded by its mountain walls.[3] The feeling is very clearly reflected in all foreign records. We have already seen what special notice is taken by Hiuen Tsiang and Ou-k'ong of the mountains enclosing the kingdom and of the difficulty of the passes leading through them.[4] The statements of the early Arab

[1] See OLDHAM'S *Manual of Indian Geology* (1893), quoted by Mr. LAWRENCE, *Valley*, p. 50.

[2] See DREW, *Jummoo*, pp. 207 *sq.*

[3] See *Rājat.* i. 31, 39.

[4] Compare above, §§ 9, 11.

geographers brief as they are, lay due stress on the inaccessible character of the mountains. Albērūnī does the same and shows us besides the anxious care taken in old days to maintain this natural strength of the country by keeping strict watch over the passes.[1]

Even when Kaśmīr had suffered a partial conquest from the north and had become Muhammadanized, the belief in the invincibility of its bulwarks continued as strong as before. Thus Sharīfu-d-dīn, the historian of Tīmūr, writing apparently from materials collected during the great conqueror's passage through the Panjāb Kōhistān (circ. A.D. 1397), says of Kaśmīr: "This country is protected naturally by its mountains on every side, so that the inhabitants, without the trouble of fortifying themselves, are safe from the attacks of enemies." The subsequent account of the routes into Kaśmīr and other exact details suggest that the author of the *Ẓafarnāma* had access to genuine Kāśmīrian information.[2]

Watch-stations on mountain routes.

40. It is this defensive character of the mountain ranges to which we owe most of our detailed information regarding their ancient topography. We have already in connection with the accounts of Albērūnī and the Chinese pilgrims had occasion to note the system of frontier watch-stations by which a careful guard was kept on the passes leading through the mountains. These fortified posts and the passes they guarded, play an important part in the narrative of Kalhaṇa and his successors. As most of the Chronicle's references to Kaśmīr orography are directly connected with these watch-stations it will be useful to premise here a few general remarks regarding their character and purpose.[3]

The small forts which since ancient times closed all regularly used passes leading into the Valley, are designated in the Chronicles by the word *dvāra* 'gate' or by the more specific terms *draṅga* or *ḍhakka*. Numerous passages show that they served at the same time the purposes of defence, customs and police administration. They were garrisoned by troops under special commanders, designated as *draṅgeśa* or *draṅgādhipa*. The control over all these frontier stations and the command of the 'Marches' generally was vested in Hindu times in one high state officer, known by the title of *dvārapati*, 'lord of the Gate,' or equivalent terms.[4]

[1] See above, §§ 12, 14.

[2] See the extract from Sharīfu-d-dīn's Ẓafarnāma in *Tārīkh-i-Rashīdī*, transl. by N. Elias and E. D. Ross, p. 432; compare also Ritter, *Asien*, ii. pp. 1122, *sq.*

[3] For detailed references regarding these stations see my notes, *J. A. S. B.*, 1895, pp. 382 *sqq.*; *Rājat.* i. 122; iii. 227 (*D*).

[4] Compare *Rājat.* note v. 214.

The organization of the system was somewhat changed in Muhammadan times when the guarding of the several routes through the mountains was entrusted to feudal chiefs known as Maliks (Skr. *mārgeśa*).[1] These held hereditary charge of specific passes and enjoyed certain privileges in return for this duty. In other respects the system underwent scarcely any change. The fortified posts with their small garrisons survived on all important routes almost to our own days being known as *rāhdārī* in the official Persian.[2]

It may be noted that apart from their character as military defences against foreign inroads the Draṅgas were also in another respect true 'gates' to the country. Nobody was allowed to pass outside them coming from the Valley without a special permit or pass. The system thus provided an important check on unauthorized emigration which was withdrawn only after the last Kaśmīr famine (1878).[3]

In order to appreciate fully the importance of these frontier watch-stations it should be remembered that the mountain regions immediately outside Kaśmīr were almost in every direction held by turbulent hill-tribes. To the hardy Dards (*Darad*) in the north and the restless Khakhas (*Khaśa*) in the south and west the rich Kaśmīr with its weak population has always appeared as a tempting prey. The last inroad of plundering Khakhas occurred not more than half a century ago and will not soon be forgotten.[4] At the same time it is certain that the valour of these hardy mountain clans on the confines of Kaśmīr has at all times contributed greatly to the natural strength of the mountain defences. Without this protective belt the latter themselves would scarcely have remained so long proof against foreign invasion.

[1] A detailed and interesting account of the *Maliks* and the routes held by them is given by Baron HÜGEL, *Kaschmir*, ii., pp. 167 *sqq.*; i., p. 347.

[2] See *J. A. S. B.*, 1895, p. 385; also below, § 49, 52.

[3] For an early reference to this system of passports at the *Dvāras*, see *Jonar.* 654. For a description of the cruel exactions often connected with 'Rāhdārī,' compare LAWRENCE, *Valley*, p. 215. I have never been able to visit the sites of the old watch-stations at the several passes without thinking of the scenes of human suffering they must have witnessed for centuries.

[4] Compare *Rājat.* i. 317 note.

Section II.—The Pīr Pantsāl Range.

Kaśmīr orography.

41. In order to understand correctly the data relating to the ancient topography of the mountains around Kaśmīr, it is necessary to acquaint ourselves with their actual configuration and character. In the following account it will be possible only to indicate the most prominent features of this mountain system, and those directly connected with the historical data under discussion. For detailed information on Kaśmīr orography a reference to the lucid and instructive account in Mr. Drew's work may be specially recommended.[1]

The mountain ring enclosing Kaśmīr is divided into three main ranges. One of these, usually designated as the *Pīr Pantsāl* Range, forms the boundary of the Kaśmīr Valley to the south and southwest. It may be considered to begin from the southernmost part of the Valley where the Bān^{a}hāl Pass, 9200 feet above the sea, marks the lowest depression in the chain of mountains. After running for about 35 miles from east to west the range turns to the north-northwest. In this direction it continues for about fifty miles more, and after attaining its greatest elevation in the Taṭakūṭī Peak (15,524 feet above the sea), gradually descends towards the Valley of the Vitastā. All important old routes towards the Panjāb cross this great mountain barrier, and this circumstance enables us to trace some interesting information regarding its ancient topography.

Eastern portion of Pīr Pantsāl Range.

The Bān^{a}hāl Pass at the eastern extremity of the range must owing to its small elevation have always been a convenient route of communication towards the Upper Cināb Valley and the eastern of the Panjāb hill-states. It takes its modern name from a village at the south foot of the pass which itself is mentioned in Kalhaṇa's Chronicle by the name of Bāṇaśālā.[2] The castle of Bāṇaśālā was in Kalhaṇa's own time the scene of a memorable siege (A.D. 1130) in which the pretender Bhikṣācara was captured and killed. Coming from the Cināb Valley he had entered *Viṣalāṭā*,[3] the hill district immediately south of the Bān^{a}hāl Pass with the view to an invasion of Kaśmīr. As his move-

1 See *Jummoo*, pp. 192–206.

2 See *Rājat.* viii. 1665 *sqq.* and note. Bān^{a}hāl is the direct phonetic derivative of Skr. *Bāṇaśālā*, medial Skr. *ś* being regularly changed into *h* in Kaśmīrī.

3 See *Rājat.* viii. 177. The name of Viṣalāṭā is probably preserved in that of the river *Bichlārī*. Viṣalāṭā more than once served as a safe retreat for Kaśmīrian refugees; comp. *Rājat.* viii. 177, 697, 1074.

ment fell in the commencement of the winter, he could not have selected a more convenient route. The Bān^{a}hāl Pass is the only one across the Pīr Pantsāl Range on which communication is never entirely stopped by snowfall. Kalhaṇa's narrative shows that the political and ethnographic frontier of Kaśmīr ran here as elsewhere on the watershed of the range. For the castle of Bāṇaśālā, though so near as to be visible already from the top of the pass (*saṁkaṭa*), was already held by a Khaśa chief.[1]

Proceeding westwards from Bān^{a}hāl we come to a group of three snowy peaks reaching above 15,000 feet. With their bold pyramidal summits they form conspicuous objects in the panorama of the range as seen from the Valley.[2] Kaśmīr tradition locates on them the seats from which Viṣṇu, Śiva and Brahman, according to the legend already related, fought Jalodbhava and desiccated the Satīsaras. The westernmost and highest of these peaks (15,523 feet) forms the famous NAUBANDHANA Tīrtha. According to the legend related in the Nīlamata and other texts and connected with the Indian deluge story, Viṣṇu in his fish Avatāra had bound to this peak the ship (*nau*) into which Durgā had converted herself to save the seeds of the beings from destruction.[3] At the foot of this peak and to the northwest of it, lies a mountain lake over two miles long known now as *Kōns^{a}r Nāg*, the KRAMASARAS or *Kramasāra* of the Nīlamata and Māhātmyas.[4] It is supposed to mark a footstep (*krama*) of Viṣṇu, and is the proper object of the Naubandhana pilgrimage.

About 8 miles straight to the west of this lake, the range is crossed by a pass, over 14,000 feet high, known now by the name of *Sidau* or *Būdil*. It lies on a route which in an almost straight line connects Śrīnagar with Akhnūr and Siālkōt in the Panjāb plain. Running up and down high ridges it is adapted only for foot traffic, but owing to its shortness was formerly a favourite route with Kaśmīrīs.[5] The name *Sidau* is given to the pass from the first village reached by it on the

[1] *Rājat.* viii. 1674, 1683. *Saṁkaṭa* is the regular term for 'pass.'

[2] Marked on maps as 'Brama Sakal,' perhaps a corruption for *Brahmaśikhara* 'Brahman's peak.'

[3] See *Nīlamata*, 33 *sqq.*; *Haracar.* iv. 27; *Śrīv.* i. 474 *sqq.*; *Śārvāvatāra* iii. 4, 12; v. 43, etc.

[4] See *Śrīv.* i. 482 *sqq.* where a visit of Sulṭān Zainu-l-'ābidīn to this lake is related at length; *Nīlamata*, 121, 1272; *Naubandhanamāhātmya*, passim; *Śārvāvatāra* iii. 10; v. 174, etc.

[5] According to DREW, *Jummoo*, p. 524, the distance from Jammu to Śrīnagar by the Sidau route is reckoned at 129 miles while *viâ* the Bān^{a}hāl it is 177 miles.

The name Būdil is given to the pass from the hill-district adjoining it on the south; compare my note *Rājat.* vi. 318.

Kaśmīr side. It is by this name, in its original form SIDDHAPATHA, that the pass is mentioned in Kalhaṇa's Chronicle as the route chosen for a pretender's irruption in Sussala's reign.[1]

A snowy peak close to the west of the pass of Siddhapatha marks the point where the main range changes its direction towards north-northwest. From the same point there branches off in a westerly direction the lower Ratan Pīr Range to which we shall have to refer below. Beyond this lie the passes of Rūprī and Darhāl, both above 13,000 feet in height. They are not distinctly named in the Chronicles. But as they give most direct access to Rajaurī, the ancient *Rājapurī*, and are crossed without much trouble during the summer months they are likely to have been used from an early time. Near the Darhāl Pass lies the *Nandan Sar*, one of the numerous tarns which along this portion of the chain mark the rock-ground beds of old glaciers. It is probably the *Nandana Nāga* of the Nīlamata.

Pīr Pantsāl Route.

42. About five miles due north of the Nandan Sar we reach the lowest dip in the central part of the whole range. It is marked by the pass known as *Pīr Pantsāl*, 11,400 feet high. The route which crosses it has from early days to the present time been the most frequented line of communication from Kaśmīr to the central part of the Panjāb. The frequent references which the Chronicles make to this route, permit us to follow it with accuracy from the point where it enters the mountains. This is in the valley of the Rembyār[2] River (*Ramaṇyāṭavī*), a little below the village of *Hūr²pōr*.

This place, the ancient S'ŪRAPURA, is often referred to as the entrance station for those reaching Kaśmīr from Rājapurī and the neighbouring places, or *vice versâ* as the point of departure for those travelling in the opposite direction.[3] S'ūrapura was founded by S'ūra, the minister of Avantivarman, in the 9th century evidently with the intention of establishing a convenient emporium on this important trade-route.[3] He transferred to this locality the watch-station (*draṅga*) of the pass. Its site, as I have shown in my *Notes on the Ancient Topography of the Pīr Pantsāl Route*,[4] can still be traced at the place known as *Ilāhī Darwāza* ('the gate of God'), a short distance above the village. We find the

1 See *Rājat.* viii. 557. In the Chronicles of Śrīvara and his successors the tract about Sidau is repeatedly referred to as *Siddhādeśa*, an evident adaptation of the Ks. form of the name.

2 See *Rājat.* iii. 227, Note *D*, § 1.

3 Compare *Rājat.* v. 39 note.

4 See *J. A. S. B.*, 1895, p. 385. This paper should be compared for all details regarding the other sites along this route.

commanders of this frontier-station more than once engaged in military operations against intending invaders from the other side of the mountains.

Ascending the valley of the Rembyār[1] or Ramaṇyāṭavī for about 7 miles we reach the point where the streams coming from the Pīr Pantsāl and Rūprī Passes unite. In the angle formed by them rises a steep rocky hillock which bears on its top a small ruined fort known as *Kāmelankōṭh*. These ruins probably go back only to the time of 'Aṭā Muḥammad Khān,' the Afghān Governor of Kaśmīr, who, about 1812, fortified the Pīr Pantsāl Route against the Sikh invasion then threatening. But I have proved in the above-quoted paper that they mark the original position of the ancient watch-station on this route before its transfer to Sūrapura.[1] Kalhaṇa, iii. 227, calls this site *Kramavarta*. This name is rendered by a glossator of the 17th century as *Kāmelanakoṭṭa* and still survives in the present *Kāmelankōṭh* (**Kramavartānāṁ koṭṭa*).

Hastivañja.

43. The old 'Imperial Road' constructed in early Mughal times then ascends the narrow valley, keeping on its left side high above the Pīr Pantsāl stream. At a distance of about four miles above Kāmelankōṭh and close to the Mughal Sarai of 'Alīābād, a high mountain-ridge slopes down from the south and falls off towards the valley in a wall of precipitous cliffs. The ridge is known as *Haṣt'vañj*. This name and the surviving local tradition makes it quite certain that we have here the spot at which a curious legend told by Kalhaṇa was localized from early times.[2]

The Chronicle, i. 302 *sqq.* relates of King *Mihirakula* whose identity with the White Hun ruler of that name (circ. 515–550 A.D.) is not doubtful, that when on his return from a tour of conquest through India he reached the 'Gate of Kaśmīr,' he heard the death-cry of an elephant which had fallen over the precipice. The gruesome sound so delighted the cruel king that he had a hundred more elephants rolled down at the same spot. The old glossator on the passage informs us that "since that occurrence the route by which Mihirakula returned, is called *Hastivañja*." The Persian Chroniclers too in reproducing the anecdote give *Hastivanj* as the name of the locality.

The local tradition of the neighbouring hill tracts still knows the story of a king's elephants having fallen down here into the gorge below. It also maintains that the old route to the Pass, in the times before the construction of the 'Imperial Road', crossed the *Haṣt'vañj* ridge and followed throughout the right bank of the Pīr Pantsāl

[1] *J. A. S. B.*, 1895, pp. 384 *sq.*

[2] Compare *J. A. S. B.*, 1895, pp. 378 *sqq.*

stream. This is fully borne out by a statement of Abū-l-Faẓl.[1] Describing the several routes available on the march from Bhimbhar to Kaśmīr, he clearly distinguishes "the route of Hastivanj (MSS. Hastivatar) which was the former route for the march of troops," from the 'Pīr Pantsāl route' which Akbar used on his visits to Kaśmīr.

The name Hast[i]vanj contains in its first part undoubtedly *hast[i]*, the Ks. derivative of Skr. *hastin*, 'elephant.' The second part is connected by the Persian compilators with the root *vañj* meaning 'to go' in Western Panjābī. The close connection between the name and the local legend already heard by Kalhaṇa is evident enough. But whether the latter had any foundation in fact or merely arose from some 'popular etymology' of the name, cannot be decided.

The story helps in any case to make it quite clear that the ancient route from the Pīr Pantsāl Pass kept to the right or southern side of the valley. My enquiries on the spot showed that this route though neglected for many centuries is passable for laden animals and not unfrequently used by smugglers.[2]

Pañcāladhārāmaṭha.

44. 'Alīābād Sarai is a Mughal hospice erected for the shelter of travellers about half a mile above Hast[i]vañj. It is about the highest point on the ascent to the pass where fuel can conveniently be obtained. I think it hence probable that the *Maṭha* or hospice which Kṣemendra mentions on the Pīr Pantsāl Pass, must have been situated somewhere in this neighbourhood.

[1] See *Āīn-i Akb.*, ii. pp. 347 *sq.* The form *Hastivatar* in the text is a clerical error for *Hastivanj*, easily explained in Persian characters.

[2] Dr. BERNIER who in the summer of 1665 accompanied Aurangzeb's court to Kaśmīr, has left us, in his Ninth Letter to M. de Merveilles, an accurate and graphic account of the Pir Pantsāl Route. While ascending the Pass from the Panjāb side he passed the spot where two days earlier an accident had happened curiously resembling Mihirakula's story. Fifteen of the elephants carrying ladies of the Imperial seraglio, owing to some confusion in the line of march, fell over the precipice and were lost; see *Bernier's Travels*, ed. Constable, p. 407. The curious Map of Kaśmīr given in the Amsterdam edition of 1672 shows accordingly the '*Pire Penjale*' mountain with a troop of elephants rolling in picturesque confusion over its side.

Former editions of Ince's '*Hand-book*' placed the scene of this accident at a spot called Lāl Ghulām just opposite Hast[i]vañj on the 'Imperial Road.' It is evident that this wrong location was due to the original compiler having somehow confused Bernier's account and the local tradition referring to Hast[i]vanj. The edition of 1888, p. 64, rectifies this mistake, but still indicates Lāl Ghulām as the site "of many a dreadful accident" before the causeway of the 'Imperial Road' was made. As a matter of fact, the left side of the valley was not used at all as a route before the construction of the 'Imperial Road' along its cliffs.

Of the accident on Aurangzeb's march no recollection survives.

Kṣemendra makes this interesting reference in that curious portion of the Samayamātṛkā already alluded to, which describes the wanderings of the courtezan Kaṅkālī.[1] The heroine of his story after effecting some petty thefts in Kaśmīr proceeds to *Sūrapura*. There she passes herself off as the wife of a load-carrier (*bhārika*) engaged on the 'salt road.'[2] By this term the Pīr Pantsāl route is quite correctly designated. It has remained to the present day the chief route by which the produce of the Panjāb salt-mines coming *viâ* Jehlam and Bhimbhar enters Kaśmīr.[3] She keeps up the disguise which is evidently intended to help her through the clutches of the officials at the frontier watch-station, by taking next morning a load on her head and starting with it towards the pass (*saṁkaṭa*). On the way she passes along high mountains by precipitous paths deeply covered with snow. By nightfall she reaches the PAÑCĀLADHĀRĀMAṬHA after having in the meantime assumed the guise of a respectable housewife and apparently disposed of her load. It being late in the season, she passes the night there shivering with cold. Thence she finds her way open to India where a career of successful adventures awaits her.

The name Pañcāla.

45. Kṣemendra's itinerary is of particular value because it supplies us with the only mention of the old name of the pass I can trace. It is certain that with him PAÑCĀLADHĀRĀ designates the highest portion of the route, *i.e.*, the Pass of the Pīr Pantsāl. It is equally obvious that *Pañcāla* is the original of the modern Ks. *Pantsāl* which is in fact identical with the earlier form except for the regular change of Skr. *c* into Ks. *ts*. In the Pahārī dialect of the population inhabiting the valleys to the south the name is still pronounced *Pañcāl*.[4]

[1] See *Samayam.* ii. 90 *sqq.*, and above, § 25.

[2] Professional load-carriers or Coolies are found to this day in numbers in Hürṣpōr, Paṣiāna and other places near the Pīr Pantsāl Pass. Of Zainu-l-'ābidīn it is specially reported that he settled a colony of load-carriers from *Abhisāra* (*i.e.*, the country about Bhimbhar) at the customs-station of Sūrapura; see *Śrīv.* i. 408. Coolies are the only means of transport on the Pīr Pantsāl and other passes when the snow lies to any depth.

[3] Salt is a considerable article of import into Kaśmīr where it is wholly wanting; see LAWRENCE, *Valley*, p. 393. I remember vividly the long strings of salt-laden bullocks which I used to meet daily when marching into Kaśmīr by the Pīr Pantsāl route.

[4] I am not certain of the origin of the pronunciation of the name as *Pīr Panjāl* now accepted by Anglo-Indian usage. It is known neither on the Kaśmīr nor on the Panjāb side of the range itself. It meets us first in Bernier's 'Pire Penjale.' Tieffenthaler, however writes more correctly *Pensal*; see *Description de l'Ind* 1786, pp. 87 *sq.*

The term *dhārā* which is added to Pañcāla, represents in all probability the equivalent of our 'pass.' Skr. *dhārā* means generally the sharp edge of some object. According to Wilson's Dictionary, as quoted by Böthlingk-Roth, the word also carries the specific meaning of 'edge of a mountain.' It is probable that this meaning was taken by Wilson's Paṇḍits from some Kośa. In any case it agrees closely with the use of the word *dhār* in the modern Pahārī dialects south of Kaśmīr. There it is well-known as the designation of any high mountain ridge above the region of alpine pasture.

We are tempted to see in *Pañcāla* a distinct local name, either of the Pass itself or of the whole mountain chain. But the use of the modern derivative *Pantsāl* presents difficulties in the way of a certain conclusion. The word Pantsāl is applied in Kaśmīr chiefly to the great mountain chain which forms the boundary of the country to the south, *i.e.*, the range to which conventional European usage gives the name of 'Pīr Pantsāl.' Yet the meaning now conveyed to a Kaśmīrī by the term Pantsāl, is scarcely more than that of 'high mountain range.'

The word is used in combination with specific names for the designation of subordinate branches of the great range towards the Panjāb. Thus the range crossed on the way from the Pīr Pantsāl Pass to Rajaurī, is known as '*Ratan Pantsāl*,' and the one crossed by the Hāji Pīr Pass between Ūrī and Prūnts (Pūnch) as '*Hāji Pantsāl*.' Sometimes, but not so generally, the term is applied also to mountains wholly unconnected with the Pīr Pantsāl system.

On the whole I am inclined to believe that *Pañcāla* > *Pantsāl* had originally the character of a specific local name. It may have been applied either to the whole of the great southern chain of mountains or its central portion about the Pīr Pantsāl Pass. Subsequent usage may then have extended the application of the term just as it has that of the name 'Alps' in Europe. Our materials, however, are not sufficient to enable us to trace the history of the word with certainty.[1]

Pīr, a term for pass.

46. In this connection it will be useful briefly to notice also the word *Pīr* which forms the first part of the modern designation of the Pass. This word is now used more or less frequently for 'Pass' both in Kaśmīr and the hill-tracts south of it. Mr. Drew who seems to have given more attention to local nomenclature in these hills than other travellers, in his explanation of the term starts from the well-known meaning of *Pīr* in Persian, an 'old man' and thence a 'saint or Faqīr.'[2]

[1] The main facts regarding the modern use of the word Pantsāl have been quite correctly recognized already by Drew, *Jummoo*, p. 157.

[2] See *Jummoo*, p. 157 note.

He refers to the common practice of Faqīrs establishing themselves on Passes for the sake of refreshing travellers and of receiving their alms. "When any noted holy Faqīr died on a Pass, the place became sacred to his memory, and was often called after him, his title of Pīr being prefixed; at last it became so common for every important Pass to have a name beginning with Pīr that the word acquired the secondary meaning of Mountain Pass." Mr. Drew refers to the fact that Dr. Bernier already found an aged hermit established on the Pass who had resided there since the time of Jahāngīr. He was supposed "to work miracles, cause strange thunders, and raise storms of wind, hail, snow and rain." From this 'Pīr,' Mr. Drew thinks, the Pass acquired the first part of its present name.

I agree with the above explanation as far as the use of the Persian word *Pīr* is concerned. But I suspect that the custom of connecting mountain passes with holy personages rests on a far older foundation. Superstitious belief has at all times and in all mountainous regions peopled the solitary summits and high ridges with spirits and other supernatural beings. To this day Kaśmīrian Brahmans fully believe in the presence of Devatās and 'Bhūtas' of all sorts on high mountain passes. In those parts of the Himālaya where Hinduism has survived among all classes, this superstition can, no doubt, be found still more fully developed.

On all Kaśmīr Passes, however rarely visited, stone-heaps are found marking the supposed graves of imaginary 'Pīrs.' Every pious Muhammadan on passing adds his stone to them. Yet these little cairns existed there in all probability long before Islām reached the country. Exactly the same custom is observed, *e.g.*, by the Hindu Pilgrims to Amaranātha on crossing the Vāvᵃjan Pass above the lake of Suśravonāga, 'to please the Devas' as the Māhātmya says.[1]

We can show that almost all famous Ziārats in Kaśmīr, whether of real or imaginary Muhammadan saints, occupy sites which were sacred in earlier times to one or the other Hindu divinity. We can scarcely go far wrong in concluding by their analogy that the 'Pīrs' of the Muhammadan wayfarers have only taken the place of the older Hindu 'Devas.'

This surmise is strikingly corroborated by the only passage of the

[1] See *Amaranāthamāhātmya*, vii. 1 *sqq*. The stones placed are supposed to represent *maṭhikās*, 'shelter-huts', in which the gods can find refuge from the evil wind blowing on the pass (hence its alleged Sanskrit name *Vāyuvarjana*). The duty of making these Maṭhikās is enjoined in vii. 19. *Maṭhikām ye na kurvanti tatraiva Vayuvarjane | dāruṇaṁ narakaṁ yānti śatakalpaṁ na saṁśayaḥ || kṛtvā tu maṭhikām devi pūjayed vidhipūrvakam | arpayed devaprītyarthaṁ dakṣināvhiḥ samanvitam ||.*

Sanskrit Chronicles which mentions the Pīr Panṭsāl Pass by its proper name. Śrīvara iii. 433, when relating the return of a Kaśmīr refugee 'by the route of Śūrapura' in the time of Ḥasan Shāh (circ. A.D. 1472–84), tells us of a fatal chill he caught "on the top of the *Pañcāladeva*." It is clear that the name here used corresponds exactly to the modern Pīr Panṭsāl, 'Pīr' being the nearest Muhammadan equivalent for 'Deva.' Dr. Bernier's account has already shown us that popular superstition had not failed to transfer also the supernatural powers of the 'Deva' to the Pīr who acted as his representative on the Pass.

Pass of Pīr Panṭsāl.

47. We may now return to the description of the old route where we left it at 'Alīābād Sarai and resume our journey towards the Pass. From the Mughal hospice the road ascends in a gently sloping valley westwards until at at a distance of about 4½ miles the height of the Pass is reached. Close to the point where the descent towards the Panjāb begins, stands the hut of a Faqīr. He has inherited the post of Bernier's Pir, but little of his spiritual powers and his emoluments. An octagonal watch-tower close by, occupied by a Sepoy post till a few years ago, may mark the site of an earlier outpost.

The descent is here as on all Passes of the range far steeper on the Panjāb side than towards Kaśmīr. *Puṣiāna*, the next stage, which is reached by zigzag paths along the rocky slope of the mountain, lies already more than 3000 feet below the Pass. The little village is an ancient place. It is undoubtedly the PUṢYĀṆANĀḌA of Kalhaṇa who mentions it repeatedly in connection with the civil wars of his own time.[1] Puṣyāṇanāḍa served often as a refuge for rebel leaders for whom Kaśmīr had become too hot. They could thence conveniently resume their inroads. We see here again clearly that the Kaśmīr frontier ran on the watershed of the range; for of Puṣyāṇanāḍa it is distinctly said that it belonged already to the territory of Rājapurī.

From Puṣiāna the road descends in a westerly direction along the bed of a stream which belongs to the headwaters of the Tauṣī (Tohī) of Prūnṭs. The next stage is the hill-village of Bahrāmgala, a considerable place which is mentioned already by Śrīvara under the name of BHAIRAVAGALA.[2] From Bahrāmgala the route turns to the south and crosses, by the Pass known as Ratan Pīr (8200 feet), the range which has already been mentioned as a branch from the Pīr Panṭsāl chain. There the route enters the region of the middle mountains and descends in an open valley to Rajaurī, the ancient *Rājapurī*, where we may leave it.

[1] Compared *Rājat.* viii. 959 note. The ending *nāḍa* is identical with *nāla*, Anglo-Indicè 'Nullah,' *i.e.*, 'valley, ravine.'

[2] See *Śrīv.* iv. 529, 589.

Central part of Pīr Pantsāl.

48. Beyond the Pīr Pantsāl Pass the summit-line of the main range rises again considerably. The *Tangtala* Pass which is about five miles due north of the Pīr Pantsāl Pass and is mentioned by Abū-l-Faẓl, [1] is already far higher. The track crossing it is scarcely practicable for animals.

The same is the case, as personal experience showed me, with the next two Passes, known by the Pahārī names of *Cittapānī* and *Cōṭī Galī*; they are both over 14,000 feet high. The first one was probably used on occasion of the inroad related by Srīvara, iv. 589 sqq. We are told there of a rebel force which coming from Rajaurī evaded the troops of Sultān Muḥammad Shāh posted at Sūrapura, by crossing the mountains in the direction of KĀCAGALA. This place, as shown on the map, corresponds undoubtedly to the alpine plateau or 'Marg' of *Kāc^{g}gul* on the northern slope of the Pīr Pantsāl range.

A short distance to the northwest of the Cōṭī Galī Pass the range culminates in its greatest snowy peak, Mount *Taṭakūṭī*, which rises to a height of 15,524 feet. Owing to its bold shape and central position this peak is the most conspicuous object in the panorama of the whole range, whether seen from the Kaśmīr Valley or from the Panjāb plains. To the north it presents a precipitous face of unscaleable rocks. On the south it is surrounded by snowfields which on the occasion of an ascent made late in the season I found still of considerable extent. We have already seen that it is this peak which Albērūnī describes under the name of *Kulārjak*.[2] For an observer from the Panjāb plain about Gujrāt the appearance of the peak, with its glittering dome of snow, is very striking, notwithstanding the great distance (about 87 miles as the crow flies). I have sighted it on very clear days even from Lahore Mināṛs.

From Taṭakūṭī the chain continues at a great elevation for a considerable distance, the summit ridge keeping an average height between 14,000 and 15,000 feet. We find it crossed first by the Passes of *Sangsafēd*, *Nūrpūr* and *Cōrgalī*, all difficult routes leading down into the valley of Loh^{g}rin, the ancient Lohara. It is only at the Tōṣ^{g}maidān Pass that we meet again with an important and ancient line of communication.

Tōṣ^{g} maidān Route.

49. This Pass being on the most direct route between the Kaśmīr capital and Lohara, was of special importance during the reigns of the later Kaśmīrian kings whose original home and safest stronghold was in Lohara. We

[1] See *Āīn-i Akb.*, ii. p. 348.

[2] Compare above, § 14.

find accordingly the route leading over the Tōṣᵘmaidān Pass often referred to in the last two Books of Kalhaṇa's Chronicle.

But apart from this historical connection the Tōṣᵘmaidān route must have always been prominent among the old lines of communication from Kaśmīr owing to its natural advantages. It was the shortest route into the Valley of Pūnch (Parṇotsa) and hence to that portion of the western Panjāb which lies between the Jehlam and Indus. It was besides under the old conditions of road and travel probably the easiest and safest route in that direction.[1]

This old route started from the present village of *Drang*, situated at the foot of the mountains in the Bīru Pargaṇa, circ. 33° 57′ lat. 74° 36′ long. The name of the village is, of course, nothing but the old term of *draṅga*, 'watch-station.' In old times the place was distinguished as KĀRKOṬADRAṄGA.[2] It may have received the distinctive first part of its name, *Kārkoṭa*, from the mountain-ridge now known as *Kākōḍar*, which is passed higher up on the route. Ks. *Kākōḍar* could well be derived form an earlier Skr. form like **Kārkoṭadhara*. The Tīrtha-saṁgraha also mentions a *Kārkoṭanāga* somewhere in this direction.

From *Draṅg* where a customs-station exists to this day, the road ascends over an easy forest-clad slope to the edge of the *Tōṣᵘmaidān*. This is, as the name indicates, a large upland plateau of undulating grazing grounds, rising very gradually from a level of about 10,000 feet. At the point where the road strikes the northern edge of the plateau, there are several ruined towers. They seem to have been last repaired on occasion of the Sikh invasion of 1814 to be referred to below, but are probably far older. The spot is known to this day as *Barbal* which in Ks. means 'the place of the Gate' (Ks. *bar* < Skr. *dvāra*). In view of this designation and the commanding position of the place we can safely locate here the proper Dvāra or 'Gate' of this route.[3]

The route after crossing the Tōṣᵘmaidān plateau ascends over gently sloping grassy ridges to the Kākōḍar spur and passing along the south foot of the latter reaches the Pass. The ascent is so gradual and easy that though the elevation of the latter is over 13,000 feet, the construction of a cart-road would so far meet with little difficulty. The Pass itself is equally easy.

On its west side two routes are available. One descends in the

[1] The historical references to this route will be found collected in Note *E* (*Rājat.* iv. 177) on Lohara, §§ 5–14.

[2] Compare *Rājat.* vii. 140; viii. 1596 notes.

[3] The term *dvāra* is actually used by Kalhaṇa, vii. 140, 1301, for a fortified post on this route. The village Drang is a suitable enough position for a customs and police station; the point for military defence, however, is higher up at 'Barbal.'

Gāgrī Valley past the village of *Chāmbar* mentioned in the Rājataraṅgiṇī by the name of S'ĀRAMBARA.[1] The other leads over a cross-spur in a south-westerly direction straight down into the valley now known as Loh^{a}rin. The position of the ancient castle of LOHARA which I was able to trace in the centre of this great and fertile valley, has been fully discussed by me in a separate note.[2] About 8 miles further down the valley and at the point where its waters meet the stream coming from Gāgrī, lies the large village of Maṇḍī. It marks the site of the old 'market of AṬṬĀLIKĀ,' repeatedly mentioned by Kalhaṇa.[3] From Maṇḍī onwards the route passes into the open valley of the Tohī (Tauṣī) of Prūnts which offers an easy line of communication down to the plains.

The historical importance of the Tōṣ^{a}maidān route is best illustrated by the fact that it was chosen on two occasions for expeditions aiming at the invasion of Kaśmīr. We have already referred to Maḥmūd of Ghazna's expedition, probably of A.D. 1021, which Albērūnī accompanied, and to which we owe the valuable information recorded by him.[4] This attempt at invasion, perhaps the most serious of which we know during Hindu times, was frustrated by the valorous defence of the castle of Lohara and a timely fall of snow. Nor was Mahārāja Raṇjit Singh more successful when in 1814 he first attempted to invade Kaśmīr by this route.[5] The portion of the Sikh army led by him in person, safely reached the Tōṣ^{a}maidān plateau where the Afghān defenders were posted near the towers above mentioned. Difficulties of supplies, however, and the news of a reverse sustained by the column marching by the Pīr Pantsāl route forced on a retreat. This ended in a complete rout in the mountain defiles about Loh^{a}rin.

It may yet be mentioned that the route over the Tōṣ^{a}maidān was already in all probability followed by Hiuen Tsiang on his way to Parṇotsa or Prūnts.[6] It remained a favourite trade route until the recent Jehlam Valley cart-road was constructed. Owing to the elevation of the Pass, however, this route is always closed by snow longer than, *e.g.*, that of the Pīr Paṇtsāl. During the winter, therefore, the road from Lohara to Kaśmīr lay by the lower passes in the west leading into the Vitastā Valley below Bārāmūla.[7]

1 See *Rājat.* viii. 1875–77 note.

2 See Note *E*, iv. 177; also *Ind. Ant.* 1897, pp. 225 *sqq.*

3 See *Rājat.* viii. 581 note.

4 See above, § 14.

5 For a more detailed account of this expedition, see Note *E*, iv. 177, § 14.

6 Compare above, § 9.

7 See Note *E* (*Rājat.* iv. 177), §§ 7, 8, for Kalhaṇa's references to the occasions when this more circuitous route was used.

Not far to the north of the Tōṣ³maidān Pass the range still attains a height of over 15,000 feet in a group of bold snowy peaks. Its summit ridge then gradually descends and is crossed by some lower passes from the neighbourhood of the well-known alpine plateau of Gulmarg. From a summit behind Gulmarg (marked 'Sallar' on the map) several spurs radiate. They form the northern end of the range, and descend very steeply and with faces of rugged cliffs into the narrow valley of the Vitastā.

Section III —The Vitastā Valley.

Valley of Vitastā.

50. We have already spoken of the Vitastā Valley as the single outlet for the waters of Kaśmīr and as the great gate of the country. We may now cast a glance at the old route leading through it and at the defences by which nature has fortified it.

The Vitastā Valley below Bārāmūla is confined between two ranges of mountains. The one to the south is a branch of the Pīr Pantsāl Range separating from the main chain at a point behind Gulmarg. The range to the north belongs to a mountain-system which culminates in the Kājnāg Peak (14,400 feet) and is usually designated by the name of the latter. These two ranges accompany the course of the river for some eighty miles westwards down to the point near Muẓaffarābād where the Vitastā makes its sudden bend to the south.

Along the whole length of the Valley, cross-ridges, more or less steep and rugged, run from both sides down to the river-bed. This consists from below Bārāmūla of an almost unbroken succession of rapids, the fall in level being nearly 3000 feet in the above distance. The Valley is throughout narrow and wanting in level ground. But for about 50 miles, down to the old Kaśmīr frontier line, it may more fitly be described as a narrow ravine. Only occasional alluvial terraces high above the river afford room here for settlement and cultivation.

Owing to this extremely confined nature of the Valley, communication on the route leading along it must have always been troublesome and risky in old times. The natural difficulties of this long defile were no doubt considerably increased by the restless disposition of the Khaśa tribe which has held it since ancient times. The Sikhs who were the last to fight their way through these passes, suffered more than one disaster at the hand of the hill-men. The line of forts erected by them along the valley attests to this day the trouble they experienced

in holding the passage.[1] The military difficulties of a march through such a succession of dangerous defiles must have been even greater in old times which knew no fire-arms. The protection of the route against an active enemy who could easily seize and hold all commanding positions, was then, no doubt, a still more difficult task.

Vitastā Valley Route.

51. It is probably on account of the circumstances here briefly indicated that we hear in the Chronicles comparatively little of the route following the Vitastā. Being the shortest line of communication to the present Hazāra District and the Indus, it was certainly used from early times. We have seen that Hiuen Tsiang and Ou-k'ong coming from the ancient Gandhāra and Uraśā followed it on their way to Kaśmīr, and that it was well-known to Albērūnī.

But it seems probable that its importance, military and commercial, was then far smaller than that of the Pīr Pantsāl and Tōṣmaidān routes. It is only in modern times that this western route has attained real prominence. This originated in the time of the Afghān rule over Kaśmīr when the route along the Vitastā to Muẓaffarābād and hence though Hazāra afforded the shortest and least exposed line of communication between Kaśmīr and Peshawar.[2] Subsequently after the annexation of the Panjāb, the establishment of the hill-station of Murree naturally drew traffic in this direction. The construction of the Tonga Road from Murree to Bārāmūla in our own time finally assured to this route its present supremacy.

There is at present a road on each side of the Valley leading down to Muẓaffarābād. But only the route along the right bank of the river can claim any antiquity. The one on the opposite bank has come into general use only within the last few decades since traffic towards Murree and Rawalpindi sprung up. The track chosen for the old road is easily accounted for by topographical facts. We have already noticed that the Vitastā Valley route was of importance chiefly as leading to Hazāra (Uraśā) and hence to the old Gandhāra. A glance at the map will show that the open central portion of Hazāra is most easily gained by crossing the Kiṣangaṅgā just above Muẓaffarābād and then passing the comparatively low ridge which separates this river from the Kunhār stream. The route here indicated finds its natural continuation towards

1 Moorcroft's account of his attempt to use the Muẓaffarābād route in 1823 gives a graphic picture of the obstacles created by the rapacious hill-tribes; see *Travels*, ii. pp. 281 *sqq*. Compare also LAWRENCE, *Valley*, p. 200.

2 Baron HÜGEL quite correctly notes a Kaśmīr tradition that the Bārāmūla route was properly opened up only about 80 years before his own visit (1835) on the arrival of the Paṭhāns; see *Kaschmir*, ii. p. 174.

Kaśmīr on the right bank of the Vitastā, the crossing of the latter being wholly avoided. It has already been shown above that this route, now marked by the stages of Abbottabad, Garhi Ḥabībullāh, Muẓaffarābād and Bārāmūla, is directly indicated in Albērūnī's itinerary.[1]

Gate of Varāhamūla.

52. We may now proceed to examine the old notices regarding this route. It started in Kaśmīr from the twin towns of *Varāhamūla-Huṣkapura* which occupied the sites of the present Bārāmūla and Uṣkūr, respectively. Huṣkapura on the left river bank, though the more important of the two places in ancient times, has dwindled down to a mere village. Varāhamūla-Bārāmūla, however, on the opposite bank is still a flourishing place and an emporium of trade. It occupies a narrow strip of open ground between the river and the foot of a steep mountain side.

Close to the western end of the town a rocky ridge with a precipitous slope runs down into the river-bed. Only a few yards' space is left open for the road. At this point there stood till last year (1897) an old ruined gateway known to the people as the *Drang* or 'watch-station.' It had been occupied as a military police post; until the 'Rāhdārī' system was abolished, watch was kept here over those who entered or left the Valley. I had examined the gateway in 1892. When revisiting the spot in May, 1898, I could scarcely trace its foundations. The decayed walls had meanwhile been sold by auction, and its materials carried away by a contractor.

Though the structure I had seen, was scarcely older than the time of Sikh rule, there can be little doubt that it marked the site of the ancient 'Gate' of Varāhamūla. This is clearly indicated by the situation of the spot which is by far the most convenient in the neighbourhood for the purpose of a watch-station. Moorcroft does not mention the name *Drang*, but describes the gateway itself accurately enough. Here then, we may assume, stood in ancient times "the stone gate, the western entrance of the kingdom", through which Hiuen Tsiang had passed before he reached Huṣkapura (*Hu-se-kia-lo*), his first night's quarter in the Valley. Ou-k'ong too and Albērūnī, as we have seen, knew well this watch-station which is also mentioned by Kalhaṇa under the general designation of *Dvāra*.[2]

The road keeps close by the bank of the river as it winds in rapid fall through the rock-bound gorge. About two and a half miles below 'Drang' the hill sides recede slightly, leaving room for a small village

[1] See above, § 14. [The construction of a Tonga road between Abbottabad and Muẓaffarābād, recently sanctioned (1899), is sure to make the old route through Hazāra again popular.]

[2] See *Rājat.* viii. 413 note.

called *Nārān Thal*. Near it stands a little temple, with a spring close by which is visited by pilgrims and is probably identical with the *Nārāyaṇa-sthāna* of the Nīlamata.[1]

About a mile below this point and close to the village of Khād^{a}-niyār,[2] the river turns sharply round a steep and narrow spur projecting into the valley from the north-west. A ledge of rocks continues the spur below the river-bed and forms the first serious rapid of the Vitastā below which boats cannot pass (see map). The road crosses the spur by a narrow and deep cut, known as *Dyār^{a}gul*. Kalhaṇa's Chronicle knows this curious cutting by the appropriate name of *Yakṣadara*, 'the demon's cleft.' According to the tradition there recorded the operations by which Suyya, Avantivarman's engineer, lowered the level of the Vitastā, extended to this point of the river bed.[3]

Old frontier in Vitastā Valley.

53. Two miles below Dyār^{a}gul we pass near the village of Zehenpōr some ancient sites vaguely described by Vigne and Hügel. Still further down near the village of Gingal the map marks the ruins of a temple which I have not been able to visit. But no localities on this route are known to us from our old sources until after about three and a half marches we reach the side valley marked on the map as 'Peliasa.' This valley and the large village at its entrance are known indeed to the Pahārī population by the name of *Peliāsa*. But the Kaśmīris settled at several places along the Vitastā Valley call them *Buliāsa*. This form of the name which I ascertained by local enquiries, enables us to identify this locality with the Bolyāsaka of the Rājataraṅgiṇī.

Kalhaṇa in his account of Saṁkaravarman's ill-fated expedition towards the Indus (A.D. 902) mentions *Bolyāsaka* as the place where the Kaśmīr army retreating from Uraśā reached the border of their own territory.[4] This reference is of special interest as it shows that Kaśmīr authority extended in Hindu times down to this point of the Valley. We can easily reconcile this fact with the existence of the 'Dvāra' at Varāhamūla.

The gorge at the latter place offered a convenient position for establishing a watch-station which was to secure control over the traffic and the collection of customs. But in regard to military defence a frontier-line in the immediate vicinity of the Kaśmīr Valley would have been very unsafe. I believe, therefore, that the Vitastā Valley

1 See *Nīlamata*, 1179, 1315, 1349. The name occurs also repeatedly in the several Varāhakṣetramāhātmyas.

2 Perhaps the *Khādanāvihāra* of *Rājat*. iii. 14.

3 Compare *Rājat*. v. 87 note.

4 See *Rājat*. v. 225 note.

below Varāhamūla was held as an outlying frontier-tract as far as the present Buliāsa. It is exactly a few miles below this place that ascending the Valley the first serious difficulties are encountered on the road. An advanced frontier-post could scarcely have occupied a strategically more advantageous position.

The conclusion here indicated is fully supported by what Kalhaṇa's narrative tells us of a locality almost exactly opposite to Buliāsa. Kalhaṇa mentions in two places a place called VĪRĀNAKA in connection with events which make it clear that it lay in the Vitastā Valley and just on the border of Kaśmīr territory.[1] I have been able to trace the position of Vīrānaka at the modern hill-village of *Viran*, near the left bank of the Vitastā and only a short distance above Buliāsa. The valley below the old frontier thus marked is now known as *Dvārbidī*. Its ancient name is given by an old gloss of the Rājataraṅgiṇī which speaks of Bolyāsaka as situated in DVĀRAVATĪ. Local enquiries have shown me that even to the present day popular tradition indicates a ridge a short distance above Buliāsa as the eastern limit of Dvārbidī.[2]

In the account of Saṁkaravarman's above-mentioned expedition six marches are reckoned from the capital of Uraśā to Bolyāsaka. This agrees exactly with the present reckoning which also counts six marches from the vicinity of Buliāsa to Abbottabad.[3] Near this place, the modern head-quarter of the Hazāra District, the old capital of Uraśā was in all probability situated.

Left bank of Vitastā.

54. It remains for us to notice briefly what is known of ancient localities on the left side of the Valley. As already explained there was no great line of communication on this side corresponding to the present Murree-Bārāmūla Road. Yet for two marches down the Valley, as far as Ūrī, the route of the left bank is likely to have been much frequented. From Ūrī a convenient route leads over the easy Hāji Pīr Pass to Prūnts or Parṇotsa. This pass owing to its small elevation, only 8500 feet, is never completely closed by snow. It is hence much used during the winter-months when the more direct routes to Kaśmīr *viâ* the Pīr Pantsāl, Tōṣ[a]maidān or other high Passes are rendered impracticable.

1 See *Rājat.* v. 214 and viii. 409. In the first passage we hear of an attack made on Vīrānaka by the chief commander of the frontier posts (*dvāreśa*). In the second *Vīrānaka* is referred to as a settlement of Khaśas which offered the first safe refuge to Sussala when defeated before Varāhamūla, A.D. 1111.

2 See *Rājat.* v. 225 and note v. 214.

3 Compare *Rājat.* v. 217 note; CUNNINGHAM, *Anc. Geogr.*, p. 104, and DREW, *Jummoo*, p. 528.

Marching down the valley from Uṣkūr: Huṣkapura, we first cross the spur which bounds the gorge of Varāhamūla from the south. We then reach a fertile little plain, about two miles broad, charmingly situated in an amphitheatre of high pine-clad mountains and facing the Dyārᵊgul ridge. It is known as *Nārᵊvāv* and contains at the village of *Sīr* and *Fattegarh* considerable remains of ancient temples. On a small plateau which forms the western boundary of this plain by the river bank, lies the village of *Kiṭsᵊhōm* It marks the site of the ancient Buddhist convent of *Kṛtyāśrama*, the foundation of which a curious legend related by Kalhaṇa attributes to the son of Aśoka.[1] Ou-k'ong refers to it as the 'monastère du mont *Kitché*.'

At Būniār, near the end of the first day's march we pass the well-preserved ruins of an ancient temple which are of considerable antiquarian interest. Its name and date cannot be traced in our extant records. Another similar ruin, but far more decayed, flanks the road about midway between Būniār and Ūrī.

From near the latter place the Vitastā Valley is held on the left bank chiefly by the Khakha tribe, on the right by the closely related Bombas. In the former we recognize the ancient *Khaśas* whose settlements lower down the Valley, at Vīrānaka, are distinctly mentioned by Kalhaṇa.[2] The predatory habits and restless ways of the Khaśas form a frequent theme in the Chronicle. The modern Khakhas and Bombas have up to the middle of the present century done their best to maintain this ancient reputation, just as their seats have remained the old ones.

[1] See *Rājat.* i. 147 note; also my *Notes on Ou-k'ong*, pp. 13 *sqq.* Kṛtyāśrama is mentioned already by Kṣemendra, *Samayam.* ii. 61.

[2] *Rājat.* viii. 409.

Section IV.—Northern mountain range.

Range towards Karnau and Śardi.

55. The mountains which enclose the Kaśmīr Valley in the north-west and north, may be looked upon as one great range. Their chain nowhere shows any marked break though its direction changes considerably. The routes leading through these mountains have never been of such importance in the history of Kaśmīr as the routes towards India and the west. Hence our information regarding the old topography of this mountain range is also less detailed.

We are least informed about that portion of the range which joins on to the Kājnāg Peak north-west of Bārāmūla and then continues in the direction of south to north towards the upper Kiṣangaṅgā. The watershed of this portion forms the western boundary of Kaśmīr towards *Karnau*, the ancient Karṇāha.[1] This territory which may be roughly described as lying between the Kiṣangaṅgā and the Kājnāg Range, seems at times to have been tributary to Kaśmīr. Yet we hear of it only in the concluding portion of Kalhaṇa's Chronicle, and there too no details are given regarding the routes leading to it. These routes as the map shows, start from the ancient districts of *Śamālā* (Hamal) and *Uttara* (Uttar).

At the point where the summit of the range comes nearest to the Kiṣangaṅgā, it takes a turn to the east and continues in this direction for more than 100 miles. The summit ridge keeps after this turn at a fairly uniform height of 12,000 to 13,000 feet for a long distance. From the northern parts of the Uttar and Lōlau Pargaṇas several routes cross the range in the direction of the Kiṣangaṅgā.

Kalhaṇa has occasion to refer to these in connection with the expedition which took place in his own time against the *Śiraḥśilā* castle. This stood on the Kiṣangaṅgā close to the ancient Tīrtha of the goddess Śāradā still extant at the present Śardi.[2] One of these routes leads past the village of *Draṅg*, situated at 74° 18′ 45″ long. 34° 33′ 30″ lat. It is certain that the place took its name from an ancient watch-station here located and is identical with the Draṅga mentioned by Kalhaṇa in connection with the above expedition.[3] I have not been able to visit the place in person but was informed in the neighbourhood that remains of

1 Compare *Rājat.* viii. 2485 note.

2 Compare regarding the *Śāradātīrtha* and the castle of *Śiraḥśilā*, notes i. 36 (*B*) and viii. 2492 (*L*), respectively; also below, § 127.

3 See *Rājat.* viii. 2507 note.

old watch-towers are still found on the path which leads up to the pass behind the village of Drang.

Besides the route marked by this old frontier-station there are others leading in the same direction. One is to the west over the Sitalvan Pass; the other lies in the west and passing through the valley of Krōras descends directly to Śardi along the *Madhumatī* stream. The portion of the Kiṣangaṅgā Valley into which these routes lead, can never have been of much importance itself though there are indications of gold-washing having been carried on in it.[1] But from Śardi starts a route leading very directly, by the Kankatōri (Sarasvatī) River and over a high pass, into Cilās on the Indus;[2] this line of comunication may already in old times have brought some traffic to Śardi.

Owing to the inroads made by Cilāsīs and the restless Bomba chiefs of the Kiṣangaṅgā Valley, the Paṭhān Governors found it necessary to settle Afrīdīs at Drang and the neighbouring villages to guard the passes. The presence of these Afghān colonies shows that the conditions which necessitated the maintenance of the old frontier watch-station at Draṅga, had altered little in the course of centuries.

Pass of Dugdhaghāta.

56. Above Śardi the course of the Kiṣangaṅgā lies for a long distance through an almost inaccessible and uninhabited gorge. Hence for over 30 miles eastwards we find no proper route across the mountain range. Kalhaṇa gives us a vivid and interesting account of the difficulties offered by a winter-march along the latter when he describes the flight of the pretender Bhoja from Śirahśilā castle to the Darads on the Upper Kiṣangaṅgā.[3]

The line of communication we meet next is, however, an important one. It leads from the north shore of the Volur lake into that part of the Upper Kiṣangaṅgā Valley which is known as Gurēz, and connects with the routes leading to Astōr and the Baltī territory on the Indus. The road used in recent years, and now improved by British engineers into the 'Gilgit Transport Road,' crosses the range by the *Trāg*[a]*bal* or *Rāzdiangan* Pass, nearly 12,000 feet high. But the route frequented in ancient times lay some eight miles further to the east.

Kalhaṇa refers in several places to the hill fort of DUGDHAGHĀTA which guarded the mountain-route leading into Kaśmīr territory from inroads of the Darads. The latter can easily be shown to have held

1 Compare Note *B* on Śāradā (*Rājat.* i. 36), §§ 2, 16. To this circumstance the of *Drang* owes probably the distinguishing designation of *Sun*ᵗ*-Drang* 'the Gold Drang,' by which it is popularly known.

2 See BATES, *Gazetteer*, p. 490.

3 See *Rājat.* viii. 2710 *sqq.*

then as now the Kiṣangaṅgā Valley about Gurēz and the neighbouring territories to the north. From Kalhaṇa's description it is evident that this frontier fort stood on, or close to, the summit of a pass. Thanks to the indications of the Chronicle I was able to identify its site on the top of the *Dud°khut* Pass.[1] The Pass (shown on the map by its ancient name *Dugdhaghāta*) is approached on the Kaśmīr side from the valley of the Baṇḍ°pōr stream, still known to the Brahmans by its old name *Madhumatī*. At the small village of Ātavuṭh (map 'Atawat') a side valley is entered which is narrow and somewhat difficult below, but higher up widens. Its highest portion which forms the immediate approach to the pass, is an open alpine valley known to the mountain shepherds as *Vijje Marg*.

The term *Marg* which denotes any high alpine grazing ground frequented in the summer by herdsmen, is the modern Kaśmīrī equivalent, and direct derivative, of Skr. *maṭhikā*. It designated originally the small shelter-huts of stone or wood usually erected on such high plateaus or valleys by their summer occupants.[2] It is probably that Vijje Marg represents the *Prājimaṭhikā* which Kalhaṇa mentions as the position occupied by the Kaśmīr forces during their unsuccessful siege of the fort.

As a characteristic point it may be mentioned that the garrison depended for its water-supply on the storage of snow. This had become exhausted at the late summer season when the siege took place, but, luckily for the Darad defenders, was replaced by a fresh fall of snow. The latter is explained by the elevation of the pass which I estimated at about 11,500 feet. Snow-storms occur sometimes on the neighbouring *Trāg°bal* Pass so early as September.

From the Dud°khut Pass an easy track over the ridge marked 'Kiser' on the map leads down to Gurēz, the chief place of the Valley. The latter corresponds probably to the DARATPURĪ of the Rājataraṅgiṇī. The route over the Dud°khut, being very direct and comparatively easy during the summer, was much frequented by Dard traders until the recent construction of the 'Gilgit Transport Road.' It was used by the Sikhs for military convoys until a disaster caused by an avalanche above Ātavuṭh induced them to change it for the Trāg°bal route. It also seems to have been mentioned to Baron HÜGEL.[3] In Muhammadan

[1] For detailed evidence regarding this location and a description of the site, see *Rājat.* vii. 1171 note.

[2] Skr. *maṭhikā* is the diminutive of *maṭha* 'hut', 'Sarai.' The Ks. derivative of the latter term, *mar*, is still used regularly for the rude shelter-huts which are found on the higher passes particularly towards the north.

[3] See *Kaschmir*, ii. p. 169.

times both routes were in charge of a 'Malik' who resided in the castle of *Baṇḍ°kōṭh*, not far from the ancient *Mātṛgrāma* shown on the map.

In ancient times there probably existed in the same neighbourhood a watch-station or Draṅga. Ou-k'ong when speaking of the 'gate to the north' through which the road led to *Polin* or Baltistān, may have meant either this Draṅga or the fort of Dugdhaghāta.

Mount Haramukuṭa.

57. To the east of the Dud°khut Pass the summits of the range gradually get higher and higher until we reach the great mountain-mass of the Haramukh Peaks. Rising to close on 17,000 feet and surrounded by glaciers of considerable size, these Peaks dominate the view towards the north from a great part of the Kaśmīr Valley. Sacred legends have clustered around them from early times. The lakes below their glaciers belong still to the holiest of Kaśmīrian Tīrthas. The ancient name of the Peaks is HARAMUKUṬA, 'Śiva's diadem.' This is explained by a legend which is related at length in the Haracaritacintāmaṇi.[1] Their height is supposed to be Śiva's favourite residence.[2] Hence Kaśmīrian tradition stoutly maintains that human feet cannot reach the Peaks' summit.[3]

The lake which lies at the foot of the north-eastern glacier, at a level of over 13,000 feet, is looked upon as the true source of the Kaśmīr Gaṅgā or Sind River. It is hence known as UTTARAGAṄGĀ or popularly *Gang°bal*.[4] It is the final goal of the great 'Haramukuṭagaṅgā' pilgrimage which takes place annually in the month of Bhādrapada and is attended by thousands of pilgrims. The bones of those who have died during the year, are on that occasion deposited in the sacred waters. A short distance below this lake is another also fed by a glacier and now known as *Nundkōl*. Its old name *Kālodaka* or *Nandisaras* is derived from a legend which makes the lake the joint habitation of Kāla, *i.e.*, Śiva, and of his faithful attendant *Nandin*. From the

1 See *Haracar.* iv. 62 *sqq.*

2 The legends relating to Śiva's residence on Mount Haramukuṭa and his connection with the several sacred sites of Nandikṣetra, are given at great length in the *Nīlamata* 1049 *sqq.*

3 Owing to this superstition I had great difficulty in inducing any of my Kaśmīrī Coolies (Muhammadans!) to accompany me on the ascent I made to the Peaks in September, 1894. My Brahman friends could not give credence to my having reached the summit. According to their opinion the very fact of my having reached the Peak was a sufficient proof of this not having been Haramukuṭa. An argument as simple as incontrovertible to the orthodox mind.

4 See my note *Rājat.* i. 57. Another name often used in the Nīlamata and other texts is *Uttaramānasa*; see *Rājat.* iii. 448 note.

latter the whole collection of sacred sites takes the name of *Nandikṣetra* by which Kalhaṇa usually designates it.[1]

In the valley of the Kānk[a]nai stream (Skr. KANAKAVĀHINĪ) which issues from these lakes, lies the sacred site of S'iva BHŪTEŚVARA (now Buth[i]śēr). It is closely connected with the legends of Mount Haramukuṭa and often mentioned in the Rājataraṅgiṇī.[2] A series of interesting temple ruins marks the importance of this Tīrtha and that of the ancient *Jyeṣṭheśvara* shrine which immediately adjoins it.[3] Bhūteśvara is passed by the pilgrims on their way back from the sacred lakes, while on their way up they reach the latter by another route, passing the high ridge known as BHARATAGIRI and the smaller lake of BRAHMASARAS.

From the Gaṅgā lake a track passable for ponies leads over the *Satsaran* Pass to *Tilēl*, a Dard district on the Kiṣangaṅgā. It is probably the route by which King Harṣa's rebel brother Vijayamalla escaped from Lahara (Lār) to the Darad territory.[4]

North-eastern range.

58. Eastwards from the Haramukuṭa Peaks the range does not overlook on the south the main Valley of Kaśmīr, but that of the Sind River. The general level of the summits rises, and glaciers of fair size become frequent on their northern slopes. Close to the head of the Sind Valley, the range we have been so far following joins on to the great chain of snowy mountains which stretches from Mount Nangā Parvat in a south-easterly direction to the Nankun Peaks in S'ūru.[5] A few miles south of this junction we arrive at a gap in the mountains which forms the lowest watershed between the Indus and the Vitastā basins. It is the Pass known generally by its Ladākhī name of *Zōjī-Lā*. It leads at an elevation of 11,300 feet from Baltal, on the headwaters of the Sind, to a high-level valley draining into the Drās River and hence into the Indus.

Route over Zōjī-Lā.

The route leading over the Zōjī-Lā undoubtedly has been already in ancient times a most important thoroughfare. It connects Kaśmīr with Ladākh and thence with Tibet and China. Here too the natural watershed has in old as in modern times been also the ethnic boundary. Beyond the Pass begins the land of the *Bhauṭṭas* or *Bhuṭṭas*, as the Tibetan inhabi-

[1] See *Rājat.* i. 36 note.

[2] See regarding the history and remains of *Bhūteśvara*, Rājat. i. 107 ; v. 55 notes. The Tīrtha was rich enough to attract a special expedition of marauding hillmen in Kalhaṇa's time ; see viii. 2756.

[3] See *Rājat.* i. 113 note.

[4] See *Rājat.* vii. 911.

[5] Compare regarding this great range which may fitly be called the main range of the mountain system around Kaśmīr, DREW, *Jummoo*, pp. 194 *sqq.*

tants of the Indus region are uniformly designated in our Kaśmīrian texts (modern Ks. *Buṭ*).[1]

Ou-k'ong is the first who refers distinctly to this route when speaking of the road which leads through the gate in the east to Tou-fan or Tibet. Kalhaṇa has scarcely occasion to refer to it, as the regions beyond the Pass lay quite beyond the reach of the political power of the later Kaśmīrian kings. He probably means, however, the Zōjī-Lā when mentioning the route of the *Bhuṭṭa*-land (*Bhuṭṭarāṣṭrādhvan*) by which the Darads offered to pass the pretender Bhoja into Kaśmīr, while the more direct routes from their own territory were closed by the winter.[2] An easy pass connects Tilēl at the head of the Kiṣangaṅgā Valley with the Drās territory to the east. From there Bhoja could then have entered Kaśmīr *viâ* the Zōjī-Lā.

This Pass, the ancient name of which is not known to us, has more than once witnessed successful invasions of Kaśmīr. Through it came early in the 14th century the Turk (?) *Ḍulca* and the Bhauṭṭa *Riñcana* whose usurpation led to the downfall of Hindu rule in the Valley.[3] About two centuries later Mirzā Muḥammad Ḥaidar with his small Mughal force successfully fought here his entrance into Kaśmīr (A.D. 1532). The account he gives of this exploit in his *Tārīkh-i-Rāshidī*, is not without topographical interest.[4]

59. A high peak situated about 10 miles east-southeast of the Zōjī-Lā, marks the point where the range forming the eastern boundary of Kaśmīr branches off from the main chain. This range runs in an almost southerly direction until it reaches the southernmost headwaters of the Vitastā. It then turns to the north-west and at the Bāu[s]hāl Pass joins on to the Pīr Pantsāl Range. Through this range there lead routes connecting Kaśmīr with the Maḍivāḍvan Valley (see § 84) which drains into the Cināb, and with Kaṣṭ[s]vār, the ancient Kāṣṭavāṭa, on the Cināb itself. Both these Valleys are confined, difficult of access, and scantily populated. They have hence never played an important part either in the foreign relations or trade of Kaśmīr. On this account our notices regarding the old topography of the dividing range are extremely meagre.

[1] Compare *Rājat.* i. 312–316 note.

[2] Compare *Rājat.* viii. 2887.

[3] See *Jonar.* 142 *sqq.*, and for the stratagem by which Riñcana forced his way into Lahara (Lār), 165 *sqq.* The *Laharakoṭṭa* mentioned in the last passage probably represents the old watch-station of this route, but its position is uncertain.

[4] See *Tārīkh-i-Rashīdī*, transl. by Messrs. Elias and Ross, pp. 423 *sqq.*, and below, § 131.

Tīrtha of Amaranātha.

At its northern end and close to the great snowy peak already mentioned, is the Tīrtha of AMAREŚVARA or AMARANĀTHA, known by its Kaśmīrī name as *Ambarnāth*. Together with the sacred Gaṅgā-lake on Mount Haramukuṭa, it is now the most popular of Kaśmīrian pilgrimage places. Its Yātrā in the month of Śrāvaṇa attracts many thousands of pilgrims not only from Kaśmīr but from all parts of India.[1] Their goal is a cave situated at a considerable altitude and formed by a huge fissure on the south side of a snowy peak, 17,300 feet high (marked 'Ambarnath' on map). In this cave there is a large block of transparent ice formed by the freezing of the water which oozes from the rock. It is worshipped as a self-created (*svayaṁbhū*) Liṅga, and is considered the embodiment of Śiva-Amareśvara.

Judging from the scanty references made to this Tīrtha in the Rājataraṅgiṇī and the Nīlamata, it appears doubtful whether it could have enjoyed in old times quite such great celebrity as now. But Jonarāja already relates a visit to this sacred site paid by Sultān Zainu-l-'ābidīn,[2] and in the Māhātmya literature Amareśvara receives its due share of attention. The pilgrims' route described in great detail by the Amaranāthamāhātmya ascends the valley of the eastern branch of the Lid^{a}r or Ledarī.

There the lake of the Nāga SUŚRAVAS, now known as Suśramnāg or (with a popular etymology) Śeṣanāg, is visited at the north foot of a great glacier descending from the Kohenhār Peak. In this lake and a small rock-bound inlet of it called JĀMĀTṚNĀGA (Zām^{a}tur[1] Nāg), the local legend, related by Kalhaṇa, i. 267 *sqq.*, and connected with the ancient site of Narapura, has placed the habitation of the Nāga Suśravas and of his son-in-law.[3] The route then crosses a high pass, known as Vāv^{a}jan (Skr. *Vāyuvarjana* in the Māhātmya), into a high-level valley drained by five streams which bear the joint designation of PAÑCATARAṄGIṆĪ. From there the pilgrims toil up a lofty spur to the north-east and descend into the narrow gloomy valley which lies at the foot of the Ambarnāth Peak. It is watered by a stream (Amarāvatī) which comes from the glacier of a still higher peak to the east. Joining the Pañcataraṅgiṇī it flows through an inaccessible gorge down to the head of the Sind Valley near Baltal.

[1] See for the old notices of the Tīrtha, *Rājat.* i. 267 note; for a description of the modern pilgrimage, VIGNE, *Travels*, ii. pp. 10 *sqq.*, and BATES, *Gazetteer*, pp. 121 *sq.*

[2] Compare *Jonar.* (Bombay ed.) 1233 *sqq.*

[3] Compare *Rājat.* i. 267 note.

Watershed range between Sindhu and Vitastā.

60. Connected with the eastern range is a mass of mountains which it will be convenient to mention here though it does not form part of the mountain-barriers of Kaśmīr. It fills the great triangular space which lies between the Sind Valley and the range in the east we have just noticed, the level ground along the right bank of the Vitastā forming as it were the base. This mass of mountains separates from the eastern ridge between the Kohenhār and Amburnāth Peaks. Trending westwards it soon culminates in the conspicuous pinnacle of Mount *Gāśṛbṛār* (map 'Kolahoi'), close on 18,000 feet in height. From this conspicuous mountain numerous spurs radiate with glaciers in their topmost hollows.

The highest of these ridges runs for about thirty miles along the Sind Valley, of which it forms the southern side. A high cross-spur, now known as Dūrūn Nār, which descends to the north towards Sunᵃmarg, is probably identical with Mount Dhūpāvana, the scene of a siege related in the Rājataraṅgiṇī.[1] The extremity of this ridge in the west forms the amphitheatre of bold hills which encircle the Ḍal lake and Śrīnagar on the north. Here we have Mount Mahādeva which is much frequented as a Tīrtha.[2]

Facing it from the south is the rocky spur which lines the eastern shores of the Ḍal. It bore in old days the name of Śrīdvāra,[3] and is the site of a series of ancient pilgrimage places, such as Sureśvarī, Tripureśvara, Harṣeśvara, and Jyeṣṭheśvara, which will be discussed below. The extreme offshoot of this spur is the 'Hill of Gopa' (*Gopādri*), the present Takht-i Sulaimān, which is so conspicuous a feature in the landscape of Śrīnagar. Other spurs descending into the vale further east form successively the semicircular side-valleys containing the Pargaṇas of Vihī and Vular.

We now return once more to the eastern range. South of the Kohenhār Peak which is still over 17,000 feet high, its summit ridge gets gradually lower. It is crossed by the *Margan* Pass into Maḍivāḍvan. Of the latter valley I can find no old mention. Still further south we come to the *Marbal* Pass, at an elevation of 11,500 feet, which forms the usual route towards Kaṣṭᵃvār.

This territory which is now partially inhabited by Kaśmīrīs, is mentioned as an independent hill-state by Kalhaṇa.[4] The valley into

[1] See *Rājat.* viii. 595 note and below, § 131.

[2] It is mentioned in the *Nīlamata*, 1324, and frequently in the *Śarvāvatāra*.

[3] See *Rājat.* viii. 2422 note.

[4] Compare regarding the old *Kāṣṭhavāṭa* note vii. 588-590, where also the references in the later Chronicles are given.

which the route descends immediately after crossing the Marbal Pass, is known now as *Khaiśāl*. It is once mentioned as *Khaśālī* by Kalhaṇa and more frequently referred to in the last Chronicle by the name of KHAŚĀLAYA.[1] From the latter source we learn that it was inhabited by Khaśas to whose occupation it may have owed also its name. So we note here once more in the east the coincidence of the ethnic boundary with the natural watershed.

SECTION V.—UPPER COURSE OF THE VITASTĀ.

61. We have now completed the circuit of the great mountain-barriers which enclose the Kaśmīr Valley, and can turn our attention to its interior. This is naturally divided into two great parts. One comprises the plain formed by the alluvium of the Vitastā and its main tributaries; the other consists of plateaus or Karēwas elevated above the river flats and largely caused by old lacustrine deposits. We shall first notice the alluvial plain and the river-system which has created it.

Name of Vitastā.

The great river which is the recipient of the whole drainage of the country, is now known to Kaśmīrīs by the name of *Vyath*. This modern designation is the direct phonetic derivative of the ancient Sanskrit VITASTĀ which we meet already among the river-names of the Rigveda.[2] The intermediary Prakrit form **Vidastā* underlies the *Hydaspes* of the Greeks in which we note, as so frequently in Greek renderings of foreign names, the modifying action of popular etymology.[3] In Ptolemy's *Bidaspes* we have another rendering which though later in date yet approaches closer to the sound of the Indian original.[4] The name *Jehlam* which is

[1] Compare *Rājat.* vii. 399 note.

[2] The line of phonetic development may be roughly represented as Skr. *Vitastā* > Pr. **Vidastā* > Ap. **Vi*[*h*]*ath* > Ks. *Vyath*.

The name Vitastā is still well-known to Kaśmīr Brahmans from the Māhātmyas and similar texts, and is currently used by them. The form 'Vedasta' which Drew and other writers indicate as the old name of the river "still used by those who follow Sanskrit literature," is due to some error of hearing. It is curious to meet a similar form **Vidastā* in the transcription of the Chinese Annals of the 8th century; see my *Notes on Ou-k'ong*, p. 31.

[3] The ending in the form *Hydaspes* is undoubtedly due to the influence of the numerous Persian names known to the Greeks which end in -ασπης (Old Persian *aspa*). For the rendering of initial *Vi-* by 'Υ compare Hystaspes: *Vishtāspa*.

[4] Ptolemy's *Bi* (for *Vi*) is the most exact phonetic reproduction possible in Greek characters. It is evident from Ptolemy's Panjāb river names that he did not take

now borne by the Vitastā in its course through the Panjāb, is wholly unknown to the genuine usage of Kaśmīr. It is apparently of Muhammadan origin and has been brought to Kaśmīr only by Europeans and other foreigners.[1]

The river to which the name Vitastā or Vyath is properly applied, is first formed by the meeting of the several streams which drain the south-eastern portion of the Valley. This meeting takes place in the plain close to the present town of Anatnāg or Islāmābād. But sacred tradition has not failed to trace the holiest of Kaśmīr rivers to a more specific source.

Legendary source of Vitastā.

An ancient legend, related at length in the Nīlamata and reproduced by the author of the Haracaritacintāmaṇi,[2] represents the Vitastā as a manifestation of Śiva's consort Pārvatī. After Kaśmīr had been created, Śiva at the request of Kaśyapa, prevailed upon the goddess to show herself in the land in the shape of a river, in order to purify its inhabitants from the sinful contact with the Piśācas. The goddess thereupon assumed the form of a river in the underworld, and asked her consort to make an opening by which she might come to the surface. This he did by striking the ground near the habitation of the Nīlanāga with the point of his trident (*śūla*). Through the fissure thus made which measured one *vitasti* or span, the river gushed forth, receiving on account of this origin the name *Vitastā*. The spring-basin where the goddess first appeared was known by the several designations of *Nīlakuṇḍa*, *Śūlaghāta* ('spear-thrust') or simply *Vitastā*.[3] It is clear that the spring meant is the famous Nīlanāga, near the village of Vērnāg in the Shāhābād Pargaṇa. It is a magnificent fountain which amply deserves the honour of being thus represented as the traditional source of the great river.[4]

The legend makes Pārvatī-Vitastā subsequently disappear again from fear of defilement by the touch of sinful men. When brought to light a second time by Kaśyapa's prayer the goddess issued from the Nāga of *Pañcahasta*. In this locality we easily recognize the present

his nomenclature directly or indirectly from the historians of Alexander, but from independent sources. Bidaspes, Zaradros, Bibasis, Sandabal, these all represent unsophisticated attempts to reproduce in sound the genuine Indian forms. The same cannot be said of the names given by Arrian, Pliny, etc.

1 Albērūnī already knows the name *Jailam*; see above, § 14. Śrīvara when relating an expedition of Sultān Ḥaidar Shāh into the Panjāb, sanskritizes this name into *Jyalami*; see ii. 152.

2 See *Nilamata*, 238 *sqq.*; *Haracar.* xii. 2–34.

3 See *Nilamata*, 1290; *Haracar.* xii. 17.

4 Compare for the Nilanāga and its round spring-basin (kuṇḍa), *Rājat.* i. 28 note

village of Pānzath, situated in the Div^{a}sar Pargaṇa and boasting of a fine spring which is still visited by the pious of the neighbourhood.[1] After another disappearance for a reason similar to the above, the goddess came forth a third time at *Narasiṁhāśrama*. This place I am unable to trace with certainty. Finally the goddess was induced to abide permanently in the land when Kaśyapa had secured for her the company of other goddesses, who also embodied themselves in Kaśmīr streams, like Lakṣmī in the Viśokā, Gaṅgā in the Sindhu, etc.

Another version of the legend which, however, seems of less ancient date, seeks the place of the Vitastā's second appearance in the spring of the modern *Vith^{a}vutur*, a small village situated about one mile to the N. W. of Vērnāg.[2] The place is known by the name of *Vitastātra* to Kalhaṇa who mentions Stūpas erected there by King Aśoka.[3] This notice certainly seems to indicate some sacred character attaching to the spot. Yet Kalhaṇa's direct mention of the Nīlakuṇḍa as the birth-place of the Vitastā leaves no doubt as to where the tradition prevalent in his own time placed the source of the sacred river.[4]

Headwaters of Vitastā.

62. The streams which unite close to Anatnāg and there form the true Vitastā river, are the *Sāndrạn*, the *Bring*, *Ār^{a}path* and *Lid^{a}r*. Of these the first and southernmost drains the Shāhābād (or Vēr) Pargaṇa and receives the water of the sacred springs mentioned in the preceding paragraph. Its old name I am unable to trace with any certainty. The next affluent, the *Bring*, comes from the side-valley which forms the Pargaṇa of the same name. The ancient name of the stream is unknown, the modern Vitastāmāhātmya which gives it as *Bhṛṅgī*, being but a doubtful authority. The Bring too is fed by the water of some well-known Nāgas, among which the famous Trisaṁdhyā fountain and the springs of Ardhanārīśvara (Nāṛ^{u}) may be specially mentioned.

The Ār^{a}path which comes from the north-east, is mentioned repeatedly in the Nīlamata by its ancient name of *Harṣapathā*.[5] The

[1] Compare *Rājat.* v. 24 note.

[2] This version is found in the Vitastāmāhātmya, ii. 37, *sqq.*, which calls the place *Vitastāvartikā*; see also VIGNE, i. p. 335.

[3] See *Rājat.* i. 102 note.

[4] *Rajāt.* i. 28. I am unable to account for the mention made in the *Mahābh.* iii. lxxxii. 90 of the Takṣaka Nāga in Kaśmīr as the Vitastā, *i.e.*, its source. No such distinction is claimed for the well-known Takṣaka spring near Zevan (Jayavana); see *Rājat.* i. 220. The author of the *Tīrthayātrā* in the Mahābh. shows no accurate knowledge of Kaśmīr and seems to have made a mistake here.

[5] See *Nīlamata*, 232, 1299, etc.

valley it drains is known as the Kōṭhēr Pargaṇa and takes its name from the sacred tank of *Kapaṭeśvara*. At the western end of the spur on the slope of which this Tīrtha is situated, issue the magnificient springs of Achᵃbal (Akṣavāla). They form a small stream by themselves, which flows into the Harṣapathā. A short distance below the village of Khanᵃbal (map 'Kanbal') where the three streams hitherto mentioned unite, their waters are joined from the north by those of the Lidᵃr.

This river, the ancient *Ledarī*,[1] receives a number of glacier-fed streams which drain the high range towards the Upper Sind Valley. It is hence in volume more considerable than any of the previously named affluents. The Ledarī spreads in several branches through the wide valley forming the Pargaṇas of Dachūnpōr and Khōvurpōr which take their names, 'Right Bank' and 'Left Bank,' respectively, from their position relative to this river. In old days a canal constructed on the hillside to the east carried the water of the Ledarī, and with it fertility, to the barren plateau of Mārtāṇḍa or Maṭan.[2]

Vitastā's course in alluvial plain.

63. At Khanᵃbal the Vitastā becomes navigable and continues so on its whole course through the valley. There too the great flat plain begins which stretches on both sides of the river down to Bārāmūla in the north-west. In its course to the Volur lake, a direct distance of about 54 miles, the river falls only some 220 feet.[3] The slope in the general level of the plain is equally gentle. The bed of the river lies everywhere in the alluvial soil, the result of the deposition of sediment at flood times when the river overflows its banks. Down to Srīnagar the river keeps in a single bed and its islands are but small, in fact mere temporary sandbanks. The course is in parts very winding. But as far we can judge from the position of the old sites along the river, no great changes are likely to have taken place in historical times in this portion of the river's course.

When the river is low as during the winter, the banks rise on an average about 15 feet above the water. But in the spring when the snow melts, the great volume of water brought down from the mountains rises to the top of the banks and often overflows it. Dangerous floods may also follow long and heavy summer-rains, and sometimes

1 See *Rājat.* i. 87.

2 The construction of this canal by Zainu-l-'ābidīn is described at length by *Jonar.* (Bo. ed.) 1232–60. It is probable that there existed earlier irrigation works on the same plateau. See below, § 111.

3 See Drew, *Jummoo*, p. 163.

cause immense damage to the crops over a great portion of the cultivated area of the Valley.[1]

Such floods and the famines which are likely to follow, were a danger well-known in old times already and are more than once mentioned by Kalhaṇa.[2] Against them the villages and riverside towns have always endeavoured to protect themselves by artificially raising the banks. The allusions found in the Chronicle suffice to show that the construction of embankments (*setu*, now *suth*), with the accompanying system of floodgates closing lateral drainage channels, has existed since ancient times.[3] One great regulation scheme which was directly designed to diminish these risks, and of which we possess a detailed historical account, will be discussed below. The equally elaborate system by which water was secured for the irrigation of the otherwise dry alluvial flats along the river, will also be specially noticed.

The navigable waters of the Vitastā have from ancient times to the present day formed the most important highway of Kaśmīr. The value of the river and of the numerous canals, lakes, and streams which are also accessible to boats, for the development of internal trade and traffic can hardly be overestimated. Until a couple of years ago there were nowhere in Kaśmīr, not even in the flattest parts of the Valley, roads fit for wheeled traffic. Carriages were practically things unknown to the population bred in the Valley. As long as the communication with the outer world was restricted to difficult bridle-paths or tracks passable only for load-carrying Coolies, the construction of such roads would have been, in fact, of very slight advantage. The importance of river-traffic in Kaśmīr may be estimated from the fact that the number of boatmen engaged in it (and their families) amounted according to the census of 1891 to nearly 34,000.[4] That boats were in old days, just as up to the present time, the ordinary means of travel in the Valley, is shown by the frequent references to river journeys in the Chronicles.[5]

Equally eloquent testimony to the historical importance of river navigation in Kaśmīr is borne by the position of the ancient sites. We

1 Compare for data as to modern floods, LAWRENCE, *Valley*, pp. 205 *sqq.*

2 See *Rājat.* vii. 1219; viii. 2449, 2786; also vii. 1624; viii. 1417, 1422; *Jonar.* 403 *sqq.*

3 See *Rājat.* i. 159; iii. 483; v. 91, 103, 120; viii. 2380, etc.; *Jonar.* 404, 887; *Śrīv.* iii. 191 *sq.*, etc.

4 Compare regarding the *Hāṇs* of Kaśmīr, LAWRENCE, *Valley*, p. 313; also *Rājat.* v. 101 note.

5 See *Rājat.* v. 84; vii. 347, 714, 1628, etc.

shall see that all the towns which from time to time were the capitals of the country, were built on the banks of the Vitastā, and that the great majority of other important places of ancient date were similarly situated. It is certain that then as now all produce of the country was brought to the great centres by water. Villages even when situated at a great distance, had, no doubt, just as at the present day, their landing places (Ks. *yārᵊbal*) on the river or the nearest navigable waterway. Kalhaṇa's description of the semi-legendary city of *Narapura* shows how closely the busy "coming and going of ships" was connected in the Kaśmīrian mind with the splendour of a large town.[1]

64. After these general remarks we may now proceed to follow the Vitastā's course through the Valley noticing its tributaries in due order as we reach the confluences. Below Khanᵊbal[2] the river receives in succession the several branches of the Ledarī and then passes the ancient town and Tīrtha of Vijayeśvara, the present Vijᵊbrōr. About a mile lower down, its course lies between high alluvial plateaus or Karēwas. One on the left bank, the Tsakᵊdar Uḍar, will be noticed below as one of the most ancient sites of the Valley (Cakradhara).

The Gambhīrā.

About three miles further down and not far from the village of Marhōm (the old *Maḍavāśrama*), the Vitastā is joined by the Veśau and Rembyārᵊ Rivers which meet a short distance above their common confluence with the Vitastā. This river junction is known to the Māhātmyas by the name of GAMBHĪRASAṄGAMA ('the deep confluence') and is still visited as a Tīrtha.[3] The short united course of the Veśau and Rembyārᵊ bears the old name of GAMBHĪRĀ and is referred to under this designation repeatedly by Kalhaṇa. The Gambhīrā is too deep to be forded at any time of the year, and being on the route from Vijayeśvara to Śrīnagar, is of military importance. It was twice the scene of decisive actions. King Sussala's army on its retreat over the Gambhīrā (A.D. 1122) suffered a complete rout. Six years later Sujji, his son's general, gained an equally signal victory by forcing the passage in the face of a rebel army.[4]

1 See *Rājat.* i. 201 *sq.*

2 According to a gloss on *Nīlamata* 1307, Khanᵊbal, the port, so to say, of Anatnāg corresponds to the Khaṇḍapuccha Nāga of that text. This Nāga is elsewhere mentioned, but I have no distinct evidence for its identification.

3 See *Rājat.* iv. 80 note. Junctions of rivers and streams (*saṁgamas*) are everywhere in India favourite places for Tīrthas.

4 See *Rājat.* viii. 1063 *sqq.*, 1497 *sqq.*

The Viśokā.

The Veśau, frequently mentioned by its ancient name of VIŚOKĀ in the Chronicles, the Nīlamata and other texts,[1] is a considerable river. It receives all the streams coming from the northern slope of the Pīr Pantsāl Range between the Sidau and Bāu°hāl Passes. Its traditional source is placed in the Kramasaras or Kōns°r Nāg Lake below the Peak of Naubandhana. The Nīlamata, 271 *sqq.* relates a legend which identifies the Viśokā with Lakṣmī and accounts for its name ('free from pain'). The fine waterfall which is formed by the stream of the Kōns°r Nāg not far from the village of Sidau, is now known as *Ahr°bal*. The Nīlamata calls it *Ākhor bila* 'the mousehole,' which may possibly be the origin of the modern name.[2] As soon as the Viśokā emerges from the mountains, numerous irrigation canals are drawn from it which overspread the whole of the old Pargaṇas of *Kavāla* (Āḍ°vin) and *Devasarasa* (Div°sar).

One of these canals is the *Sun°mąn[i] Kul* which is mentioned in the Rājataraṅgiṇī by its ancient name of SUVARṆAMAṆIKULYĀ.[3] If the story of its construction by King Suvarṇa, reproduced from Padmamihira, could be trusted, we should have to ascribe to this canal a high antiquity. It leaves the Viśokā near the village shown as 'Largoo' on the map and rejoins it near the village of Āḍ°vin (map 'Arwin'). Another old canal, called *Nāndī* (not shown on the map), leaves the Viśokā near Kaimuh, the ancient Katīmuṣa, and irrigates the land between the lower course of this river and the Vitastā. Its name is connected perhaps with that of the village *Nandaka* which is referred to in connection with Avantivarman's drainage operations.[4] The Viśokā is navigable up to Kaimuh.

The Ramanyāṭavī.

The *Rembyār°* which joins the Viśokā a little above Gambhīrasaṁgama, we have met already before as the river uniting the streams from the Pīr Pantsāl and Rūprī Passes. Kalhaṇa mentions it by its ancient name RAMAṆYĀṬAVĪ when relating the legend of the burned city of Narapura.[5] The Rembyār° after leaving the mountains below Hür°pōr flows divided in many channels within a wide and mostly dry bed of rubble and boulders. This strip of stony waste along the river attains a width of over two miles near the village of Tsüran (map 'Charran').

The local legend referred to attributes the creation of this waste to

[1] See *Rājat.* iv. 5 note.

[2] Compare *Nīlamata*, 271 *sqq.*, and for *Ākhor bila*, 283.

[3] See *Rājat.* i. 97.

[4] See *Rājat.* v. 85 note.

[5] See *Rājat.* i. 263–265, note.

the Nāgī Ramaṇyā. She had come down from the mountains carrying masses of stone to assist her brother, the Suśravas Nāga, in the destruction of Narapura. When she learnt that he had already completed his task, she dropped the stones 'more than a Yojana' from the site of the doomed city. The distance indicated corresponds exactly to that of the village of Litᵃr where the Rembyārᵍ leaves behind its stony bed and passes into alluvial soil. The village land for five Yojanas above that place was buried by the mighty boulders which Ramaṇyā left along her trail. Similar tales regarding the origin of stone-wastes ("Murren") are well-known to European alpine folk-lore.

The Vitastā near Śrīnagar.

65. Below Gambhīrasaṁgama the Vitastā receives from the right the stream which drains the ancient district of Holaḍā, the present Vular. It then passes close to the foot of the Vastarvan spur, near the old town of Avantipura. No important stream joins the river from the right until we reach Śrīnagar. The affluents on the left like the Rāmuṣa are also of small volume. Some do not reach the river direct but end in low marshes, communicating with the latter only by gates made in the river embankments. Of the ancient sites situated along the river, the town of PADMAPURA, the present Pāmpaṛ, is the most considerable. As we approach Śrīnagar we pass the site of the ancient capital, PURĀṆĀDHIṢṬHĀNA, marked by the present village of Pāndrēṭhan. It lies between the right river bank and the southern foot of the ridge which encircles the Ḍal. For the streams we have next to notice, a reference to the special map of Ancient Śrīnagara is necessary.

Just before we reach the area of the city proper, the Vitastā is joined by a stream which drains the lake to the east of the city. This lake, known as *Ḍal* (Skr. Ḍala), is fed by plentiful springs and by streams which reach it from the north. Its surplus waters flow out towards the Vitastā by a canal which is now called Tsūṇṭh Kul, but in ancient times bore the name of MAHĀSARIT.[1] This canal passes through an ancient embankment (*setu*) which protects the city as well as the low shores of the Ḍal from floods of the river, and already figures in the traditional account of the foundation of Śrīnagar. The position of the gate which closes the outflow of the Mahāsarit is marked on the map by the entry 'Durgāgalikā.'

A small channel from the river—whether artificial or natural cannot

1 For the identification of the Tsūṇṭh Kul and the Mār canal in the city with the *Mahāsarit*, my note on Rājat. iii. 339–349 should be consulted. In addition to the evidence there recorded, it should be noted that the Mahāsarit is twice mentioned by its old name also in the *Śārvāvatāra* iii. 74; iv. 129 *sq.*

be ascertained now—joins the Mahāsarit at this very point and turns the ground between it and the river into an island. This is now known by the name of Māy[3]sum, derived from the ancient MĀKṢIKASVĀMIN. We shall have to refer to it again in our account of the topography of Srīnagar. From Durgāgalikā downwards the Mahāsarit or Tsūṇṭh Kul was in old times the south-eastern boundary for that part of Srīnagar which lies on the right bank of the Vitastā. Being a natural line of defence it is frequently referred to in the narrative of the various sieges of the capital.[1]

The confluence of the Mahāsarit and Vitastā which is just opposite to the modern palace, the Shērgaṛhi, has been a Tīrtha from early times and is mentioned by its correct name in Maṅkha's description of Kaśmīr.[2] Śrīvara refers to it by a more modern name, *Mārīsaṁgama*, where *Mārī* is an evident adaptation from the Ks. form *Mār*.[3] The latter name, itself a derivative of Mahāsarit, is applied at the present day to another branch of the Ḍal outflow. This turning to the west passes through the marsh known as Brāṛ[i]nambal (*Bhattāranaḍvalā*) and then enters the city.

This canal is of considerable importance for the internal traffic of the city as it opens a convenient waterway to the Ḍal and greatly facilitates the transport of its manifold produce.[4] After passing behind the whole of the city quarters on the right river-bank the Mār issues near the quarter of Narvor (Skr. *Naḍavana*) into the marshes of the Anch[i]ār. Through the latter a connection is thus secured with the Sind river delta. This extension of the Mār to the west seems, however, of later date, as Śrīvara attributes the construction of a navigable channel towards the Sind to Zainu-l-'ābidīn.[5]

The Ḍal lake.

66 The lake which supplies the water of the Mahāsarit, is in some respects one of the most favoured spots of the whole Valley. Its limpid water, the imposing aspect of the mountain amphitheatre which encloses it on three sides, and the charming gardens and orchards around it have made the Ḍal justly famous.

1 See *Rājat.* viii. 733, 753, 3131.

2 See *Śrīkaṇṭhac.* iii. 24, *Mahāsaridvitastayoḥ ... saṁgamaḥ*. Here too as in former translations of the Rājataraṅgiṇī, Mahāsarit has been wrongly taken as an common noun and explained as 'great river.'

3 The term *Mārī* is also elsewhere used in the later Chronicles and the Māhātmyas; comp., *e.g.*, *Śrīv.* i. 442; iv. 298; Fourth Chron. 145, etc.

4 It is this narrow canal, more picturesque than sweet-smelling, which has led to the frequent comparisons of Srīnagar with Venice. It has not received much attention in recent years and for want of dredging seems in danger of silting up.

5 See *Śrīv.* i. 440 *sq.*

The Ḍal measures about four miles in length and two and a half in width where it is broadest. Its depth nowhere exceeds 30 feet, and in most parts it is far more shallow. At its southern end it is fringed by lagoons, and a great portion of it is covered by the famous floating gardens. Notwithstanding the superabundance of water-plants and vegetable matter, the water everywhere retains an admirable clearness and freshness. This is, no doubt, due to the ampleness of the springs which rise within the lake. Though we find no direct mention of the lake in the Rājataraṅgiṇī, and though it does not claim any particular sanctity, there is no want around its shores of ancient and holy sites.

The earliest reference to the lake itself occurs in the Chronicle of Śrīvara who describes at length how King Zainu-l-'ābidīn diverted himself on the lake and adorned its vicinity.[1] Śrīvara calls the lake ḌALA, while the few Māhātmyas which condescend to mention it, use the form *Dala*.[2] He also mentions the two small artificial islands called *Laṅkā*, and now distinguished as *Rupᵃlānk* and *Sunᵃlānk* ('the Silver Laṅkā,' 'Golden Laṅkā'). Different names are given to several distinct portions of the lake. But of these only HASTAVĀLIKA, the present Astᵃvōl, can be traced in the Chronicles.

The sacred sites of Gopādri, Jyeṣṭheśvara, Thedā, Śureśvarī, etc., with their numerous Nāgas line the eastern shores of the Ḍal. They will be mentioned below in the description of the vicinity of the capital. The well-known gardens of Shālimār, Nishāt and Nasīm are creations of the Mughal Emperors who did much to enhance the natural beauties of the lake.

Besides the springs of the lake itself the latter is fed also by a stream which comes from the Mār Sar lake, high up in the mountains to the east. The old name of this stream, marked 'Arrah' on the map, is uncertain. The Śarvāvatāra seems to extend to it the name *Mahāsarit*.[3] In its lower course where it approaches the north shore of the Ḍal, it now bears the name of Tēlbal Nāl (stream). An earlier form is furnished by Śrīvara who calls the stream at this point, by the name of TILAPRASTHĀ; the latter is also found in several Māhātmyas.[4]

67. From the junction with the Mahāsarit downwards the Vitastā flows for over three miles between almost unbroken lines of houses raised high above the water on stone embankments. The latter consist now-a-days chiefly of large blocks of stone which belonged to ancient

1 *Śrīv.* i. 418 *sqq.*
2 See, *e.g.*, *Vitastāmāh*, xxi. 39.
3 See *Śarvāv.* iii. 75; iv. 129.
4 See *Śrīv.* i. 421; *Śarvāv.* iv. *sqq.*, etc.

temples and other structures of pre-Muhammadan date. Judging from their size and careful carving we can well picture to our mind the splendid appearance which the river-banks must have here presented in bygone days.

The Kṣiptikā.

The river within the city flows first in one long reach due north. Near the fourth bridge in the heart of the city, it makes a great bend and turns to the south-west. A canal which leaves the left bank of the river between the Shērgaṛhi palace and the quarter of Kāṭhūl (Kāṣṭhīla), and rejoins the river near the last bridge, allows boats to cut this great bend. It now bears the name Kuṭ⁹kul, derived from the ancient designation of KṢIPTIKĀKULYĀ.[1] The Kṣiptikā is often mentioned in the later portions of Kalhaṇa's Chronicle which relate the sieges of Śrīnagar witnessed in his own time. It forms to this day the natural line of defence for that part of the city which occupies the left river-bank, and which could be successfully attacked only by crossing the Kṣiptikā.[2] No information is available to us as to the origin of this canal. Judging from its position it is likely to have been a natural side-channel of the river which was subsequently maintained or improved for the convenience of navigation.

The Dugdhagaṅgā.

A few hundred yards lower down the Vitastā is joined on its left bank by a considerable river now known as the *Dūdgaṅgā*, 'the milk Gaṅgā,' or *Chaṯs⁹kul*, 'the white stream.' Its ancient name is given as *Dugdhasindhu* in Bilhaṇa's description of Śrīnagar.[3] The Māhātmyas know it by the name of *Śvetagaṅgā*, 'the white Gaṅgā,' to which the alternative modern designation, Chaṯs⁹kul, exactly corresponds.[4] Its waters come from the central part of the Pīr Panṯsāl Range round Mount Taṭakūṭi, its chief sources being the mountain-streams marked as 'Sangsofed' (Sangsafēd) and 'Yechara' on the map. The confluence of the Vitastā and Dūdgaṅgā, opposite to the old quarter of Diddāmaṭha, is still a Tīrtha of some repute and is probably alluded to already by Bilhaṇa.[5]

1 Kś. *kul* <Skr. *kulyā* is the ordinary term for small streams or canals.

2 For detailed evidence of this identification, see *Rājat.* viii. 732 note.

3 *Vikramāṅkac.* xviii. 7.

4 See *Vitastōmāh.* xxii; *Śvetagaṅgāmāh.*, etc. Skr. *śveta* becomes in Kś. by regular phonetic conversion *chuth*, fem. *chaṯs⁹*.

The Nīlamata curiously enough does not mention the Dūdgaṅgā unless it is meant by *Kṣīranadī*, 1281. The latter name, meaning 'the river of milk,' is given to the Dūdgaṅgā by a passage of the modern Vitastāmāhātmya, xxii.

5 See *Vikram.* xviii. 22.

Section VI.—Lower Course of the Vitastā.

68. Immediately below Śrīnagar we come to marshes which stretch along both sides of the river for a considerable distance. Those on the left bank, of which the Hukh^{a}sar and Paṇz^{i}nōr Nambal are the nearest, are fed by mountain-streams of smaller volume. The marshes to the north of the river are more extensive and belong to the Delta of the Sind River, the greatest tributary of the Vitastā within the Valley.

The Sindhu.

Our survey of the northern range of mountains has already taken us to the true headwaters of the Sind near the Zōji-Lā and the Ambarnāth Peak. Its traditional source in the sacred Gaṅgā-lake on Mount Haramukh has also been noticed. This great river has a course of over sixty miles and drains the largest and highest portion of the mountain-chain in the north. Its ancient name, Sindhu, means simply 'the river' and is thus identical with the original designation of the Indus.[1] The Rājataraṅgiṇī mentions the river repeatedly, and it figures largely in the Nīlamata, Haracaritacintāmaṇi and the Māhātmyas.[2] Everywhere it is identified with the Gaṅgā, as already by Albērūnī's informants. The valley of the Sind forms the district of Lār, the ancient Lahara, one of the main subdivisions of Kaśmīr territory.

Where this valley debouches into the great Kaśmīr plain, near the village of Dud^{a}rhōm, the old *Dugdhāśrama*, the river spreads out in numerous branches. These form an extensive Delta, covered in its greatest portion by shallow marshes and known as *Anch^{i}ār*. Its eastern side extends along the strip of high ground which connects Śrīnagar with the foot of the spur at the mouth of the Sind Valley. The western

1 It is customary in Kaśmīr to distinguish the two rivers by giving the designation of 'the Great Sind (Buḍ Sind),' to the Indus. This is found as '*Bṛhatsindhu*,' already in the Haracaritacintāmaṇi, xii. 45.

The identity of the two river names has led to a great deal of confusion in geographical works down to the beginning of the present century. The Sind River of Kaśmīr was elevated to the rank of one of the chief sources of the Indus, or else represented as a branch of the great river taking its way through Kaśmīr (!). This curious error is traceable, *e.g.*, in the map of 'L'Empire du Grand Mogol' reproduced in Bernier's *Travels*, ed. Constable, p. 238, from the Paris Edition of 1670, and in the map of Ancient India attached to Tieffenthaler, *Description de l' Inde*, 1786, p. 60. Compare Hügel, *Kaschmir*, i. p 330. Even Wilson, writing in 1825, says of the Kaśmīr Sind that "it is not improbably a branch of the Indus."

2 See *Rājat.* i. 57 note; also iv. 391; v. 97 *sqq.*; viii. 1129; *Jonar.* 982; *Śriv.* iv. 110, 227, etc.

side of the delta is marked by an alluvial plateau which continues the right or western side of the lower Sind Valley down to the river's confluence with the Vitastā. The base of the triangle is the Vitastā itself which between Śrīnagar and this junction flows in a bed separated by artificial banks from the marshes on either side. The waters of the Sind after spreading over this wide Delta leave it in a single channel at its western extremity, opposite to the village of Shāḍ[1]pūr.

Confluence of Vitastā and Sindhu.

The confluence of the Vitastā and Sindhu has from early times enjoyed exceptional sanctity as a Tīrtha. Kaśmīr tradition, as recorded already in the Nīlamata, identifies the Vitastā and Sindhu, the largest and holiest rivers of the country, with the *Yamunā* and *Gaṅgā*, respectively. Their junction represents, therefore, the Kaśmīrian equivalent of the famous *Prayāga* at the confluence of the great Indian rivers. The VITASTĀSINDHUSAṄGAMA is often referred to as an important Tīrtha in the Rājataraṅgiṇī, the Nīlamata and numerous other texts. It is actually known by the name of PRAYĀGA to the modern tradition and the Māhātmyas.[1] A small island built of solid masonry rises in the river-bed at the point where the waters of the two rivers mingle. It is the object of regular pilgrimages on particular Parvans throughout the year. On it stands an old Cinār tree which to the pious Kaśmīrian represents the far-famed Ficus Indica tree of the real Prayāga.

Notwithstanding the accumulated holiness of this Tīrtha there is most explicit evidence to show that its present position dates back only to about a thousand years. We owe the knowledge of this interesting fact to the detailed account which Kalhaṇa has given us of the great regulation of the Vitastā carried out under King Avantivarman (A.D. 855–883). As the change in the confluence of the Vitastā and Sindhu forms one of the most striking results of this regulation, Kalhaṇa's account of the latter may conveniently be noticed in the present place. I shall restrict myself to an indication of the main facts connected with these operations, referring for all detailed evidence to Note *I* (v. 97–100) of my translation.

Suyya's regulation of the Vitastā.

69. Kalhaṇa tells us in his opening notice[2] that the produce of Kaśmīr had in earlier times been greatly restricted owing to disastrous floods, particularly from the Mahāpadma or Volur lake, and the general water-locked condition of the country. Drainage operations

[1] For a detailed account of the references to the Vitastā-Sindhusaṅgama and the ancient remains near it, see Note *I* (*Rājat.* v. 97–100), §§ 14, 15; also note iv. 391.

[2] See *Rājat.* v. 68 *sqq.*

under King Lalitāditya had led to an increase of agricultural produce. But these works were apparently neglected under his feeble successors, and disastrous floods, followed by famines, became again frequent. In Avantivarman's time *Suyya*, a man of conspicuous talents but low origin, offered to remedy these troubles. Receiving the king's assent for his scheme and the necessary means, he set about regulating the course of the Vitastā with a view to a better drainage of the whole Valley. Omitting legendary details with which evidently popular tradition has embellished Suyya's story, the course adopted was briefly the following.

The operations commenced in Kramarājya at the locality called YAKṢADARA where large "rocks which had rolled down from the mountains lining both river banks," obstructed the Vitastā.[1] We have already when describing the Vitastā Valley route, referred to Yakṣadara, the present Dyār^{a}gul, as a spur projecting into the river-bed some three miles below the commencement of the Bārāmūla gorge. Its rocky foot forms the first rapid of the river. By removing the obstructing rocks the level of the river was lowered. Then a stone-dam was constructed across the bed of the river, and the latter thus blocked up completely for seven days. During this time "the river-bed was cleared at the bottom, and stone walls constructed to protect it against rocks which might roll down."[2] The dam was then removed, and the river flowed forth with increased rapidity through the cleared passage.

I must leave it to competent engineering opinion to decide to what extent and at which point of the Bārāmūla gorge the operations so far described were practicable with the technical means of that age. What follows in Kalhaṇa's account is so matter-of-fact and so accurate in topographical points, that a presumption is raised as to the previous statements also resting, partially at least, on historical facts.

Wherever inundation breaches were known to occur in times of flood, new beds were constructed for the river. One of these changes in the river-bed affected the confluence of the Vitastā and Sindhu, and this is specially explained to us in v. 97–100. The topographical indications here given by Kalhaṇa are so detailed and exact that they enabled me to trace with great probability what I believe to have been the main course of the Vitastā before Suyya's regulation.

Change of confluence of Vitastā and Sindhu.

70. Kalhaṇa describes to us successively the position of the old and the new confluence relative to certain temples situated at the village of Trigrāmī and other points on the river-banks. Most of these structures I have been able to identify, and a close examination of the

[1] See v. 87 *sqq.*

[2] Compare v. 92 *sq.*

general topographical features in their neighbourhood has fully borne out the correctness of Kalhaṇa's account. Without the help of a larger-scale map it would, however, be impossible to explain here accurately the topographical evidence collected.[1] I must, therefore, once more refer to the above-quoted detailed note in my forthcoming work, where a special map, on the scale of one inch to the mile, has been inserted for the illustration of this tract. In the present place I must restrict myself to indicating the main results of my enquiries.

These have shown that while the new confluence which Kalhaṇa knew in his own time, is identical with the present junction opposite Shāḍ[1]pūr,[2] the old one lay about two miles to the south-east of it, between the village of Trigām and the Par[9]spōr plateau. The latter is the site of the great ruins of *Parihāsapura*, first identified by me and shown on the map (see below, § 121.) Trigām marks the position of the ancient *Trigrāmī*, and a short distance south of it stands the temple ruin which I identify with the shrine of Viṣṇu *Vainyasvāmin*.

Kalhaṇa mentions this temple as the point near which "the two rivers, the Sindhu and Vitastā, formerly met flowing to the left and right of Trigrāmī, respectively." Standing on the raised ground before the ruin and turning towards Shāḍ[1]pūr, we have on our left a narrow swamp about a quarter of a mile broad which runs north-east in the direction of Trigām. In this swamp and a shallow Nāla continuing it towards Shāḍ[1]pūr, we can yet recognize the old bed of the Sindhu. On the right we have the Badrihēl Nāla which divides the alluvial plateau of Trigām and Par[9]spōr. This Nāla is clearly marked as an old river-bed by the formation of its banks and is still known as such to the villagers of the neighbourhood.

The Badrihēl Nāla connects the great swamp to the east known as *Paṇz[1]nōr Nambal* with the extensive marshes stretching west and north-west of Par[9]spōr towards the Volur. This channel still serves regularly as an outflow for the Paṇz[1]nōr Nambal whenever the latter is flooded from the Vitastā at times of high-water. Were it not for the great embankments which guard the bed of the Vitastā towards the low Paṇz[1]nōr Nambal, the latter would still form a regular course of the

1 In the copies of the map accompanying this memoir the faint outlines by which the engraved Atlas of India sheet marks the low alluvial plateaus, the marshes, and similar features of this tract, have become much effaced. A reference to the original groundmap or the larger Survey map (2 miles to the inch) is hence recommended.

2 Shāḍ[1]pūr is a modern contraction for *Shahābuddīnpūr*, the name given to the place by Sultān Shahābu-d-dīn (A.D. 1354–73) who founded it, as Jonarāja, 409, tells us, at the confluence of the Vitastā and Sindhu.

river. Even so it is still liable to be invaded by the Vitastā at times of flood. For the swamp as well as the fertile village lands reclaimed around it, lie below the level of the river-bed.[1]

The old course of the rivers here briefly indicated explains the curious position of the Nōr (map 'Noroo'). This canal which is of importance for navigation leaves the Vitastā on the left bank just opposite to the present junction with the Sindhu and practically continues the southwesterly course of the latter for some distance. Only about $\frac{1}{3}$ mile of low ground divides the Nōr from the end of the swamp which marks the bed of the Sindhu at the point of its old junction opposite the Vainyasvāmin ruin.

Similarly the position of *Parihāsapura* which King Lalitāditya chose for his splendid capital, becomes now intelligible. The plateau or Karēwa of Par^{a}spōr which still preserves its name is now flanked on the east by the Paṇz^{i}nōr Nambal and on the west by the marshes of Hār^{a}traṭh. Neither of them affords in their present condition the convenient waterway we find invariably near all other Kaśmīr capitals. Before Suyya's regulation, however, the Vitastā flowed as we have seen, immediatly to the north of the plateau and at the very foot of the great temples erected here by King Lalitāditya.

Results of Suyya's regulation.

71. The object and result of the change of the confluence can, I think, also be traced yet. By forcing the Vitastā to pass north of Trigām instead of south of it, the reclamation of the marshes south of the Volur lake must have been greatly facilitated. The course thus given to the river carries its waters by the nearest way into that part of the Volur which by its depth and well-defined boundaries is naturally designed as a great reservoir to receive the surplus water of dangerous floods. The southern shores of the lake are still to this day the scene of a constant struggle between the cultivator and floods. The reclamation of land which has gone on for centuries in these low marshy tracts,[2] could never have been undertaken if the Vitastā had been allowed to spread itself over them from the south, the direction marked by its old course.

The change in the confluence of the Vitastā and Sindhu was a necessary condition for the subsequent course given to the united rivers. It

[1] See LAWRENCE, *Valley*, pp, 210 *sq*. Kalhaṇa's account shows that the huge embankments guarding the Paṇz^{i}nōr tract must be far older than the times of the Mughals to which they are popularly attributed.

[2] Compare DREW, *Jummoo*, p. 116, for a description of these tracts and the amphibious ways of the inhabitants who get their living as much from the water as the land around.

was thus closely connected with the general scheme of regulation and drainage. Kalhaṇa indicates this by referring immediately after the above passage to stone-embankments constructed along the Vitastā for seven Yojanas (circ. 42 miles) and the damming-in of the Volur lake.[1]

On the land reclaimed new populous villages were founded. From the circular dykes which were built around these villages, they are said to have received the popular designation of *kuṇḍala*, 'ring.' We actually still find two villages on the low ground near the Volur showing in their modern names the ending *kuṇḍ^{a}l*, derived from Skr. *kuṇḍala*. Uṯ^{a}kuṇḍ^{a}l (map wrongly 'Watr koondl') and Mar^{a}kuṇḍ^{a}l are situated both close to the left bank of the Vitastā before it enters the marshes at the south-eastern end of the Volur. Their names and position seem to support the assumption that the present northerly course of the river above Trigrāmī and Shād^{i}pūr is directly due to Suyya's operations.

Kalhaṇa adds that even in his own time, *i.e.*, two and a half centuries later, there were "seen, growing on the banks of the former river-beds, old trees which bore the marks of the boat ropes fastened to them."[2] Similarly the observant Chronicler noted the old pales securing the embankments "which the rivers displayed when low in the autumn."[3] We must be grateful to him for the evident interest with which he ascertained and recorded the details of Avantivarman's operations. For he has thus enabled us even at the present day to trace some of the important changes then effected in the hydrography of the whole Valley.

Course of Vitastā towards the Volur lake.

72. Following the course of the Vitastā below its present confluence with the Sindhu we soon pass the village of Sambal where the route from Srīnagar to the north of the Volur lake and thence to the Trāg^{a}bal Pass, crosses the river. Here at some distance from the left bank is the site of the ancient *Jayapura*, the capital founded by King Jayāpīḍa in the second half of the eighth century.[4] It is marked by the village of And^{a}rkōṯh situated on an island between the Sambal marsh and a branch of the canal known as Nōr. An ancient causeway connects the island with the strip of land separating the marsh from the present course of the Vitastā.

1 See v. 103 *sqq.*

2 v. 101.

3 It is still the common belief in Kaśmīr that "no embankment on the riverside is sound unless it has a foundation of piles"; Lawrence, *Valley*, p. 211. Considering the peaty nature of the soil along the lower course of the river, this belief may be justified by old experience.

4 See for the identification of this site, *Rājat.* v. 506 note, and below, § 122.

We should have some difficulty in understanding the position chosen for a town which was intended to be a place of importance if we did not know the great change effected in the course of the river by the subsequent regulation of Avantivarman. In King Jayāpīḍa's time one of the main branches of the Vitastā probably followed the line of the Nōr in this neighbourhood. The island of Andᵊrkōṭh which forms a small alluvial plateau, raised perhaps artificially in parts, was then a convenient site. This is no longer the case since the river flows to the east of Andᵊrkōṭh and at a considerable distance. We can safely attribute to this change the fact that Jayapura like the similarly situated Parihāsapura had fallen into insignificance already before Kalhaṇa's time.

Close to Sambal the river passes the foot of an isolated hill known as *Āhᵊtyung*, rising about a thousand feet above the plain. Under its shelter on the north is the small lake of *Mānasbal* which is mentioned by the name of *Mānasa*[*saras*] in the Nīlamata and by Jonarāja.[1] It is about two miles long, and occupying a rock-basin is deeper than the other lakes of the Kaśmīr plains. It is connected with the river by a short channel and partially fed by an irrigation canal carried into it from the Sind River.[2] Its ancient name is derived from the sacred lake on Kailāsa, famous in the Purāṇas and Epics and usually located in the Mansarōvar of the Tibetan highlands.

A short distance lower down the villages of Utᵊkuṇḍᵃl and Marᵊkuṇḍᵃl already referred to above, are passed on the left bank. There are various indications which make it probable that in old times the Volur lake reached much closer to these villages than it does at present. Kalhaṇa's reference seems to indicate that these villages enclosed by circular dykes were actually reclaimed from the lake, and Jonarāja still places them on the very shore of the lake.[3] In the same way Śrīvara speaking of the villages stretching from Samudrakoṭa,[4] the present Sudᵃrkōṭh, to the vicinity of Dvārikā, near Andᵊrkōṭh, seems to place them along the shore of the Volur.

A glance at the map shows that the land on the left bank of the river below the 'Kuṇḍala' villages projects like a peninsula into the lake.

1 As *Jonarāja*, 864 *sq.*, makes the ancient name quite certain, the latter could have safely been shown on the map. In some passages of the Nīlamata and Māhātmyas it might be doubted whether this lake or the Uttaramānasa on Mount Haramukh is intended; see however *Nīlamata*, 1338, where the Mānasa lake is mentioned after the Vitastāsindhusaṁgama.

2 The construction of this canal is ascribed by Jonarāja, 864 *sq.*, to Zainu-l-'ābidīn.

3 See *Rājat.* v. 120, and *Jonar.* 1230, (Bo. ed.).

4 See *Śrīv.* i. 400 *sq.*

It can be safely assumed that the creation of this strip of land which now accompanies the river-channel for some seven miles farther, is due to the continual deposits of silt. This silting-up process is still going on in this as in other portions of the Volur where streams enter it, and is likely to reduce the expanse of the lake still further in the future.[1]

A striking proof for the gradual change thus effected is afforded by the position of the artificial island known now as Zain^{a}lānk. It was constructed by King Zainu-l-'ābidīn from whom it took its proper designation of *Jainalaṅkā*. It was then, according to Jonarāja's description, in the middle of the Volur where the water was deep.[2] It is now situated in a shallow marsh close to the present embouchure of the river.

Volur lake.

73. The great lake, with the southern shores of which we have already become acquainted, is a very important feature in the hydrographic system of Kaśmīr. It acts as a huge flood-reservoir for the greatest part of the drainage of Kaśmīr and gives to the western portion of the Valley its peculiar character. Its dimensions vary at different periods, owing to the low shores to the south being liable to inundation. In normal years the length of the lake may be reckoned at about 12 and its width at 6 miles, with an area of about 78 square miles. In years of flood the lake extends to about 13 miles in length and 8 miles in width.[3] Its depth is nowhere more than about 15 feet and is continually lessening in those parts where the streams debouch into it. Notwithstanding this slight depth navigation on the lake often becomes dangerous when violent storms sweep over it from the mountains in the north. The boundaries of the lake are ill-defined in the south and partly in the east; the marshes and peaty meadows merge almost imperceptibly into the area of the lake. On the north the shores slope up towards an amphitheatre of mountains from which some rocky spurs run down to the water's edge. The fertile tract at the foot of these mountains forms the ancient *Khūyāśrama*, the modern Pargaṇa of *Khuy^{a}hōm*.

Mahāpadma Nāga.

The ancient name of the lake is MAHĀPADMASARAS, derived from the Nāga *Mahāpadma*, who is located in the lake as its tutelary deity. This designation is by far the most common in the Chronicles, the Nīlamata, and other old

[1] Compare DREW, p. 166, and LAWRENCE, *Valley*, p. 20. The latter author is probably reproducing a popular tradition when mentioning that in King Zainu-l-'ābidīn's time the waters of the Volur stretched south to Aśam and Sambal.

[2] See Jonar. (Bo. ed.) 1227 *sqq*. The name Jainalaṅkā was mutilated in the Calcutta edition; else it would have been shown on the map.

[3] See LAWRENCE, p. 20.

texts.[1] It is also used, as we have seen, in the description of Kaśmīr given by the T'ang annals.

The name *Ullola* from which the present Volur (*vulgo* 'Woolar') seems to be derived, is found only in one passage of Jonarāja's Chronicle and in a single modern Māhātmya.[2] Skr. *ullola* can be interpreted to mean 'turbulent' or '[the lake] with high-going waves.'[3] Those who have experienced the sensation of crossing the lake with a strong wind, will readily allow the appropriateness of this designation. Yet it is impossible to dismiss altogether the suspicion that the name which seems wholly unknown to the older texts, may be only a clever adaptation of the Kaśmīrī name Volur or its earlier representative. It is certainly curious that in modern Māhātmyas we meet with Ullola as a nam for the Vulgar Pargaṇa, the genuine ancient designation of which is Holaḍā.[4] Jonarāja in his commentary on Śrīkaṇṭhacarita, iii. 9, uses Ullola as a paraphrase for Mahāpadma.

Legends of Mahāpadma Nāga.

74. From an early date various legends seem to have clustered around this, the greatest of Kaśmīr lakes. The Nīlamata relates at length how the lake became the habitation of the Mahāpadma Nāga.[5]

Originally it was occupied by the wicked Nāga Ṣaḍaṅgula who used to carry off the women of the country. Nīla, the lord of Kaśmīr Nāgas, banished Ṣaḍaṅgula to the land of the Dārvas. The site left dry on his departure was occupied by a town called *Candrapura* under King Viśvagaśva. The Muni Durvāsas not receiving hospitable reception in this town, cursed it and foretold its destruction by water. When subsequently the Nāga Mahāpadma sought a refuge in Kaśmīr and asked Nīla for the allotment of a suitable habitation, he was granted permission to occupy Candrapura. The Mahāpadma Nāga thereupon approached King Viśvagaśva in the disguise of an old Brahman and asked to be allowed to settle in the town with his family. When his prayer was agreed to he shewed himself in his true form and announced to the King the approaching submersion of his city. At the Nāga's direction the King with his people emigrated and founded two Yojanas further west the new town of *Viśvagaśvapura*. The Nāga then converted the city into a lake, henceforth his and his family's dwelling place. A recollection of this legend still lives in popular tradition, and the ruins of the doomed city are supposed to be sighted occasionally in the water.

1 For detailed references see *Rājat.* iv. 593 note.

2 See *Jonar.* (Bo. ed.) 1227–30; *Dhyāneśvaramāh.* 30, 33.

3 See Bühler, *Report*, p. 9.

4 See *Vitastāmāh.* v. 48; *Haridrāgaṇeśamāh.*

5 See *Nīlamata*, 976–1008, and Bühler, *Report*, p. 10.

Another legend has found a lengthy record in Kalhaṇa's narrative of King Jayāpīḍa's reign, iv. 592 *sqq*. The Nāga Mahāpadma being threatened with desiccation by a Draviḍian sorcerer, appeared to the King in his dream and asked for protection. As a reward he promised to show a gold mine to the King. Jayāpīḍa agreed to the Nāga's prayer. Curiosity, however, induced him to let the Draviḍian first try his magic on the lake. When the waters had been dried up so far that the Nāga and his dependents were seen as human-faced snakes wriggling in the mud, the king interfered and caused the lake to be restored. The Nāga, however, resented the insult and showed to the king only a rich copper ore instead of the gold mine.

With reference to a Purāṇic legend the Mahāpadma is sometimes identified with the Nāga *Kāliya* who was vanquished by Kṛṣṇa. As the foot of the god when touching the Nāga's head made lotuses (*padma*) appear on it, Mahāpadma is treated by Kaśmīrian poets as another form of Kāliya.[1]

Lower affluents of Vitastā.

75. Of the streams which fall into the Volur lake besides the Vitastā, the stream of the *Baṇḍᵊpōr* Nāla is the most considerable. It drains the range between Mount Haramukh and the Trāgᵃbal Pass and forms a small Delta of its own to the north of the lake. Its ancient name is *Madhumatī*.[2] It is repeatedly mentioned in the Rājataraṅgiṇī in connection with the route leading to the Dard territory, but must be distinguished from another, smaller Madhumatī which flows into the Kiṣangaṅgā near the Śāradātīrtha.

The outflow of the lake's waters is at its southwest corner about two miles above the town of Sōpūr. The latter is the ancient *Suyyapura*, founded by Suyya and commemorating his name.[3] If we may judge from the position of the town and the words used by Kalhaṇa in another passage,[4] it appears probable that the operations of Avantivarman's great engineer extended also to the river's bed on this side of the lake.

About four miles below Sōpūr the Vitastā which now flows in a winding but well-defined bed, receives its last considerable tributary within Kaśmīr. It is the Pohur which before its junction has collected the various streams draining the extreme northwest of the Valley.

1 Compare *Śrīkaṇṭhac.* iii. 9; *Jonar.* 933, and my note *Rājat.* v. 114.

2 See *Rājat.* vii. 1179 and note 1171; also viii. 2883; *Nīlamata* 1259 *sqq.*, 1398, etc.

3 See *Rājat.* v. 118 note.

4 V. 104: "Trained by him, the Vitastā starts rapidly on her way from the basin of the Mahāpadma lake, like an arrow from the bow."

This portion of the country figures but little in Kalhaṇa's narrative; hence we find in the Rājataraṅgiṇī no reference to the Pohur or any of its affluents. The old name of the river is uncertain. Jonarāja in a passage which is found only in the Bombay edition, calls this river *Pahara*; the Māhātmyas vary between *Prahara* and *Prahāra*.[1] Of the side-streams the Māv^{a}r (map 'Maur') flowing through the Mach^{i}pōr Pargaṇa is named in the Nīlamata as *Māhurī*.[2] The name of the Hamal stream is identical with that of the Pargaṇa through which its course lies, the ancient *Samālā*.[3]

About 18 miles from the point where the Vitastā leaves the Volur, it reaches the entrance of the gorge of Bārāmūla. Through this defile we have already before followed the course of the river. At Bārāmūla navigation ceases. After passing with a violent current the ravine immediately below the town, the river, so placid within the Valley, turns into a large torrent rushing down in falls and rapids.

Section VII.—Soil and Climate of the Valley.

Alluvial Plateaus (Uḍar).

76. Our survey of Kaśmīr rivers has taken us along that great flat of river alluvium which forms the lowest and most fertile part of the Valley. We must now turn to the higher ground of the Vale which consists of the peculiar plateaus already alluded to.

The genuine Kaśmīrī term for these plateaus is *uḍar*, found in its Sanskrit form as *uḍḍāra* in the Chronicles. Another modern designation of Persian origin now often used, is *karēwa*. The word *uḍḍāra* is twice found as an ending of local names in the Rājataraṅgiṇī [4], while the latter Chronicles use it frequently in designations of well-known plateaus.[5] An earlier Sanskrit term no longer surviving in use, is *sūda*, originally meaning 'barren waste ground.' Kalhaṇa employs it when speaking of the well-known Dām^{a}dar Uḍar.[6]

The Uḍars of the Kaśmīr Valleys are usually considered by geologists to be due to lacustrine deposits. They appear either isolated by

1 See *Jonar.* (Bo. ed.) 1150, 1152; *Vitastāmāh.* xxvii. 2; *Svayaṁbhūmāh.*

2 *Nīlamata*, 1322 *sqq.*

3 See *Rājat.* vii. 159 note.

4 *Locanoḍḍāra* and *Dhyānoḍḍāra*, *Rājat.* viii. 1427 note.

5 See *Gusikōḍḍāra*, *the* Uḍar of Gūs near Rāmuh, *Śrīv.* iv. 465, 592, 596; *Dāmodaroḍḍāra*, the Dām^{a}dar Uḍar, *Śrīv.* iv. 618; *Laulapuroḍḍāra*, Fourth Chron. 175, etc.

6 See *Rājat.* i. 156 note.

lower ground around them or connected by very gentle slopes with spurs descending from the mountains. Often the tops of these plateaus seem almost perfectly flat, forming table lands of varying dimensions. They rise generally from 100 to 300 feet above the level of the ravines and valleys which intersect them, and through which the streams from the mountains and their own drainage find their way to the Vitastā. Most of the Uḍars are found on the south-western side of the Valley, stretching from S'upiyan to Bārāmūla. But they also occur across the river on the north-eastern side of the Valley, and at both extremities of the river-flat in the south-east and north-west.

Owing to the inferiority of the soil and the difficulty of irrigation, the Uḍars show a marked difference in point of fertility from other parts of the Valley. Those which slope down from the foot of the mountains have been brought under cultivation with the help of water-courses conducted over them from the higher ground behind. Most of these irrigation-channels are, no doubt, of ancient date, and some are specially mentioned in the Chronicles. To other Uḍars, particularly those which are entirely isolated, water could not be brought. These are either barren wastes covered with low jungle or if cultivated, yield only precarious crops owing to the uncertainty of the rainfall.

Some of the Uḍars, owing to their position near the Vitastā or for other reasons, are sites of importance in the ancient topography of Kaśmīr. Such are the plateaus of Mārtāṇḍa, Cakradhara, Padmapura, Parihāsapura. Another, the 'Uḍar of Dāmodara,' plays an interesting part in the legendary lore of the country. All these will be duly noticed in the next chapter.

Kaśmīr climate.

77. Climatic conditions are so closely connected with a country's topography that the few old notices and references which we have regarding those of Kaśmīr, may fitly find mention here.

The only distinct account of the Kaśmīr climate is given by Albērūnī.[1] He clearly indicates the reason why Kaśmīr is exempt from the heavy Monsoon rains of India proper. When the heavy clouds, he explains, reach the mountains which enclose Kaśmīr on the south, "the mountain-sides strike against them, and the clouds are pressed like olives or grapes." In consequence "the rain pours down and the rains never pass beyond the mountains. Therefore Kaśmīr has no *varṣakāla*, but continual snowfall during two and a half months, beginning with Māgha, and shortly after the middle of Caitra continual rain sets in for a few days, melting the snow and cleansing the earth. This rule has seldom an exception; however, a certain amount of extraordinary meteorological occurrences is peculiar to every province in India."

[1] See *India*, i. p. 211.

That this description is on the whole as accurate as Albērūnī's other data regarding Kaśmīr, will be easily seen by a reference to the detailed statements of Mr. LAWRENCE and Mr. ELIOT.[1] What chiefly characterizes the climate of Kaśmīr as against that of the Indian plains, is the absence of a rainy season and the equally marked absence of excessive heat. The moderate temperature of the Kaśmīr summer is ensured by the high elevation of the Valley, and has at all times been duly appreciated by its inhabitants as well as its visitors.

Kalhaṇa already proudly claims this exemption from the torments of a fierce sun as one of the favours accorded to his country by the gods.[2] His enthusiastic description of a Kaśmīr summer passed "in the regions above the forests" shows that he was no stranger to the charms of that season in the alpine parts of the country.[3] More than once he refers to the sufferings which the heat of an Indian summer outside the Valley inflicts on Kaśmīrian exiles. Even in the hill regions immediately to the south of Pīr Pantsāl the hot season with its accompanying fevers has often proved disastrous to the Kaśmīrian troops employed there.[4]

On the other hand we find also the rigours of a Kaśmīr winter duly illustrated by the Chronicle's narrative. We may refer to the description of the heavy and continued snowfall which followed Sussala's murder in Phālguna of 1128 A.D., the freezing of the Vitastā in the winter of 1087-8 A.D., etc.[5] The graphic account of Bhoja's flight to the Upper Kiṣangaṅgā Valley shows us in full detail the difficulties which attend a winter-march over the snow-covered mountains to the north of the Valley.[6] Nor do we fail to be reminded otherwise of the great differences in climate which are implied by the varying altitudes of Kaśmīr localities.[7]

Exceptionally early snowfall in the autumn such as saved the garrison of the frontier fort on the Dugdhaghāta Pass, has always been known and dreaded even low down in the Valley. The danger it represents for the rice crops is illustrated by Kalhaṇa's account of the famines resulting from such premature snowfalls.[8]

1 See LAWRENCE, p. 24 *sqq.*

2 See i. 41.

3 ii. 138.

4 Compare vii. 970; viii. 1634, 1830, 1836, 1865; regarding the fever-season of Rājapurī and neighbouring districts, my note viii. 1873.

5 *Rājat.* viii. 1376 *sqq.*; 1434 *sqq.*; vii. 592.

6 See viii. 2710 *sqq.* It must be remembered that as much as forty to sixty feet of snow falls in a severe winter on the higher ranges around Kaśmīr; see also viii. 411.

7 Compare vii. 916; viii. 2511; ii. 138.

8 See ii. 18 *sqq.*; viii. 2449.

In this as in other respects there is nothing to suggest any material change of the climatic conditions during historical times. Kalhaṇa, it is true, in describing the reign of Abhimanyu I., speaks of deep snow as "falling each year to cause distress to the Bauddhas" and obliging the king to pass six months of the cold season in Dārvābhisāra. But the whole story there related is nothing but a mere rechauffé of the ancient legend told in the Nīlamata of the annual migrations caused by the presence of the Piśācas. It therefore can claim no historical value whatever.[1]

Cultivation.

78. Cultivation such as appears to have been carried on in Kaśmīr since the earliest historical period, must necessarily leave its traces in the topography of a country and may hence claim a passing notice.

Rice has as far as we can go back, always been the largest and most important produce of the Valley. Its character as the main cereal is sufficiently emphasized by the fact that it is usually referred to in the Chronicles by the simple term of *dhānya* 'grain.'[2] The conditions of its cultivation presuppose an extensive system of irrigation, and for this the Kaśmīr Valley with its abundance of streams and springs is admirably adapted by nature. The elaborate arrangements which exist at present for taking water from the streams large and small and distributing it over all the ground capable of irrigation, will be found fully detailed in Mr. LAWRENCE's valuable and exhaustive account of Kaśmīr agriculture.[3] There is every reason to believe that they have come down with little, if any, change from a very early period.

Irrigation.

Many of the larger irrigation channels which intersect the fertile alluvial flats, or skirt the terraced slopes of the Uḍars and mountain-sides, are shown on the map; see, *e.g.*, the tracts on the lower course of the Lidᵃr, Veśau, Sind, and other rivers. In old times when the population was larger than now, much land which is at present allowed to lie waste on the hill-sides, on the Uḍars and in the low-lying tracts by the marshes, must have been under cultivation.[4] I have often come across traces of old irrigation-cuts long ago abandoned, which brought down the water of the melting snows from alpine plateaus high above the forest zone. Their distance from any lands capable of rice-cultivation is so great

[1] See i. 180, and note i. 184.

[2] "The Kashmīrīs, so far, have considered no crop worthy of attention save rice;" LAWRENCE, *Valley*, p. 319.

[3] See *Valley*, pp. 323 *sq.*

[4] Compare *Valley*, pp. 239 and 356, as to the extensive areas which were once cultivated and are likely to be so again in future.

and the trouble of their construction must have been so considerable that only a far greater demand for irrigation than the present one can account for their existence.

In the earliest traditions recorded by Kalhaṇa the construction of irrigation canals plays already a significant part. The *Suvarṇamaṇikulyā* which is ascribed to King Suvarṇa and which still brings water to a great part of the Âḍ^{s}vin district, has already been noticed.[1] The reference to the aqueduct by which King Dāmodara is supposed to have attempted to bring water to the great Uḍar named after him, though legendary in the main, is also characteristic.[2] Lalitāditya is credited with having supplied villages near Cakradhara (Ts̲ak^{s}dar) with the means of irrigation by the construction of a series of water-wheels (*araghaṭṭa*) which raised the water of the Vitastā.[3]

To Suyya, however, Avantivarman's engineer, is ascribed the merit of having on an extensive scale secured river-water for village-lands. From Kalhaṇa's detailed description it is evident that Suyya's regulation of the Vitastā was accompanied by systematic arrangements for the construction of irrigation channels. For these the water of various hill-streams was utilized as well as that of the main-river. The size and distribution of the water-course for each village was fixed on a permanent basis. He is thus said "to have embellished all regions with an abundance of irrigated fields which were distinguished for excellent produce." The increase in produce consequent on these measures and the reclamation of new lands from the river and marshes is said to have lowered the average price of a Khāri of rice from two hundred to thirty-six Dīnnāras.[4]

The importance of irrigation from a revenue point of view must have always been recognized by the rulers of the country. Hence even in later times we find every respite from internal troubles marked by repairs of ancient canals or the construction of new ones. The long and peaceful reign of Zainu-l-'ābidīn which in many respects revived the traditions of the earlier Hindu rule, seems in particular to have been productive of important irrigation works. Jonarāja's and Śrīvara's Chronicles give a considerable list of canals constructed under this king.[5] Among these the canal which distributed the water of the Pohur River over the Zain^{s}gīr Pargaṇa, and the one by which the

1 See above, § 64.

2 See *Rājat.* i. 156 *sq.* note.

3 See *Rājat.* iv. 191 note.

4 See *Rājat.* v. 109–112 and note.

5 See *Jonar.* (Bo. ed.) 1141–55, 1257 *sqq.*; *Śrīv.* i. 414 *sqq.* For repairs of old canals, see *Rājat.* viii. 2380.

water of the Lidar was conducted to the arid plateau of Mārtāṇḍa, deserve special mention. In the latter locality some work of this kind must have existed already at a far earlier period. Or else we could scarcely understand how it could have been chosen as the site for Lalitāditya's magnificent temple and the flourishing township which once surrounded it.[1]

Saffron-cultivation.

Of the other products of the Valley only two may be mentioned here, since they have from old times received special attention in all descriptions of the country. Already Kalhaṇa in his introduction designates saffron and grapes among "the things that even in heaven are difficult to find but are common there."[2] Saffron (*kuṅkuma*) has to the present day remained a famous product of Kaśmīr. Its cultivation has apparently from an early time specially flourished about Padmapura, the present Pāmpar, where the Uḍar lands are still chiefly utilized for it. The Fourth Chronicle describes at length the plant and its treatment. Abū-l-Faẓl mentions it also in the same locality and devotes to it a long notice.[3]

Grapes.

The grapes of Kaśmir which Kalhaṇa mentions repeatedly,[4] have not retained their area of cultivation with equal persistence. They must have enjoyed reputation outside Kaśmīr, because the name *Kaśmīrā* is given by Sanskrit Kośas as the designation of a special variety of grapes.[5] They were once plentiful at Mārtāṇḍa where both Kalhaṇa and the Fourth Chronicle mention them, and at many other localities.[6]

In Akbar's time grapes were abundant in Kaśmīr and very cheap; but Abū-l-Faẓl notes that the finer qualities were rare.[7] Since then, viticulture among the people generally has greatly declined. Though vines of remarkable size and age can still be found in many places, they are mostly wild. The produce of grapes is now restricted to a few old gardens at the mouth of the Sind Valley and to the new vineyards established on the Ḍal shores by the late Mahārāja for the cultivation of French vines.[8]

1 See *Rājat.* iv. 192.
2 i. 42.
3 See Fourth Chron. 926 *sqq.*; *Ain-i-Akb.*, i. pp. 357 *sq.*
4 *Rājat.* i. 42; iv. 192; vii. 498.
5 See *Böhtlingk-Roth*, s. v.
6 Fourth Chron. 851, 928.
7 *Ain-i-Akb.*, i. p. 349.
8 For a detailed account of Kaśmīr vineyards, see LAWRENCE, *Valley*, pp. 351 *sq.*

Old ethnography of Kaśmīr.

79. It will be useful to refer here briefly to the data we possess regarding the old ethnography of Kaśmīr and the adjacent hill regions.

As far as Kaśmīr itself is concerned our information does not allow us to connect any particular localities with ethnic divisions. Judging from Kalhaṇa's Chronicle and what other sources of information are available to us, the population of Kaśmīr has shown already in old times the same homogeneity that it does at present. The physical and ethnic characteristics which so sharply mark off the Kaśmīrī from all surrounding races, have always struck observant visitors to the Valley and have hence often been described.[1] Hiuen Tsiang's brief sketch reproduced above is the earliest in date and yet applies closely to the modern inhabitants.

That the Kaśmīris form a branch of the race which brought the languages of the Indo-Aryan type into India, is a fact established by the evidence of their language and physical appearance. But when their settlement in the country took place, and from which direction they immigrated, are questions beyond the present range of historical research. The purity of race which has often been noted as distinguishing the great mass of the Kaśmīr population, may be admitted with a qualification. It is probably due not only to the country's natural isolation but also to a curious faculty for absorbing foreign elements. Colonies of Mughals, Paṭhāns, Panjābīs, and Pahārīs, settled within comparatively recent times in the Valley, are being amalgamated with remarkable rapidity through intermarriage and other means.

Absorption of foreign ethnic elements.

The complete absorption of these settlements which is going on under our own eyes as it were, furnishes a likely analogy for the ethnic history of earlier times. We have reason to assume that Kaśmīr has also in Hindu times been often under foreign rule. It is difficult to believe that the reign of foreign dynasties has not been accompanied also by settlements of immigrants of the same nationality. But it is not likely that these foreign colonies were ever extensive. In any case we find no trace of their having retained a distinct and independent existence.

Various tribal sections of the population are mentioned in Kalhaṇa's narrative, but we have no means of deciding to what extent they were based on race or caste distinctions. The names of the *Lavanyas* and *Tantrins* survive in 'Krāms,' or tribal names, still borne by sections of

1 For a general account of the Kaśmīrī population DREW's remarks, *Jummoo*, pp. 174 *sqq.*, may still be recommended. Fuller details regarding the various classes, castes, etc., will be found in Mr. LAWRENCE's work, pp. 302 *sqq.*

the Muhammadan rural population (*Lūn*[1] and *Tāntr*[1]).[1] But whatever distinctions of race or caste may have originally been indicated by these 'Krāms,' they have long ago disappeared.

It is equally certain from an examination of the Chronicle that these sections were never confined to particular territorial divisions, but spread all over the Valley. The humblest of these sections is probably the one which has least changed its character during the course of centuries. The modern Ḍūmbs, the descendants of the old *Ḍombas*,[2] are still the low-caste watchmen and village-menials as which they figure in Kalhaṇa's narrative. They, like the still more despised Vātals or scavengers, cannot intermarry with other Kaśmīrīs. They have thus retained in their appearance a distinctive type of their own which points to relationship with the gipsy-tribes of India and Europe.

It is difficult to come to any definite conclusion as regards the *Ki-li-to* whom Hiuen Tsiang mentions as a low-born race settled in Kaśmīr from early times and opposed to the Bauddhas.[3] Their name, usually transcribed *Kritiya*, cannot be traced in indigenous records. There is nothing to support their identification with the *Kīras*, as suggested by General Cunningham.[4] The latter seems to have been a tribe settled somewhere in the vicinity of Kaśmīr.[5]

Races on Kaśmīr borders.

80. The ethnography of the territories immediately adjoining Kaśmīr can be traced quite clearly from the notices of the Rājatāraṅgiṇī.

In the south and west the adjacent hill-regions were occupied by *Khaśas*. Their settlements extended, as shown by numerous passages of the Chronicle, in a wide semi-circle from *Kaṣṭᵃvār* in the south-east to the Vitastā Valley in the west.[6] The hill-states of Rājapurī and Lohara were held by Khaśa families; the dynasty of the latter territory succeeded to the rule of Kaśmīr in the 11th century. I have shown elsewhere that the *Khaśas* are identical with the present *Khakha* tribe to which most of the petty chiefs in the Vitastā Valley below Kaśmīr and in the neighbouring hills belong. We have already seen that the

[1] Compare notes v. 248; vii. 1171.

[2] See *Rājat.* note iv. 475; also v. 353 *sqq.*, vi. 84, 182; vii. 964, 1133, viii. 94. These passages show that the Ḍombas also earned their bread as hunters, fishermen, buffoons, quacks, etc., and their daughters as singers and dancers. Their occupations thus closely resembled those of the gipsies whose name, *Rom*, is undoubtedly derived from Skr. *ḍomba*; see *P. W.* s. v.

[3] See *Si-yu-ki*, transl. Beal, i. pp. 150, 156 *sqq.*

[4] See *Anc. Geogr.*, p. 93.

[5] Compare my note viii. 2767.

[6] See *Rājat.* i. 317 note.

Khakhas have until very recent times worthily maintained the reputation which their forefathers enjoyed as marauders and turbulent hillmen.

North of the Vitastā Valley and as far as the Kiṣangaṅgā we now find the Bombas as the neighbours of the Khakhas to whom they are closely related. It is probable that the Karnāv district was held by them already in old times. Kalhaṇa seems to comprise them, viii. 3088, under the designation of Khaśa.

The upper Kiṣangaṅgā Valley above Śardi was in old days already as at present inhabited by Dards (Skr. *Darad*, *Dārada*) who are often referred to by Kalhaṇa as the neighbours of Kaśmīr on the north.[1] Their seats extended then too probably much further to the north-west, where they are now found in Citrāl, Yāsin, Gilgit and the intervening regions towards Kaśmīr. Megasthenes already knew them in the Upper Indus regions. Kalhaṇa relating events of his own time speaks of *Mlecchas* further to the north. These might have been Muhammadanized Dards on the Indus, and beyond.[2]

The regions immediately to the north-east and east of Kaśmīr were held by the *Bhauṭṭas*. We have already seen that these represent the people of Tibetan descent, the modern *Buṭs*, of Drās, Ladākh and the neighbouring mountain districts.[3]

[1] See *Rājat.* i. 317 note.
[2] See note viii. 2762-64.
[3] See above, § 58.

CHAPTER IV.

POLITICAL TOPOGRAPHY.

Section I.—Frontiers of ancient Kaśmīr.

81. Our account of the political topography of ancient Kaśmīr may conveniently open with a survey of its frontiers. These agree so closely with the natural boundaries of the Valley that we have already had occasion to trace them when dealing with the mountain ranges enclosing the latter. It will however be useful to supplement our information regarding these frontiers by a brief notice of the territories which lay beyond them and formed the neighbours of the Kaśmīr kingdom in Hindu times.

Territories S. E. of Kaśmīr.

Beginning in the south-east we have first the Valley of Kāṣṭhavāṭa, the present Kaṣṭ[a]vār ('Kishtwar' of the maps) on the upper Cināb. It is mentioned by Kalhaṇa as a separate hill state in the time of Kalaśa.[1] Its Rājās who were Hindus till Aurangzeb's time, practically retained their independence until the conquest of their territory by Mahārāja Gulāb Singh.

The hill-district of Bhadravāh lower down on the Cināb is once named in the Rājataraṅgiṇī as *Bhadrāvakāśa*.[2] Its Rājās were tributary to Cambā in recent centuries. This was probably the case also in earlier times as we do not find a ruler of Bhadrāvakāśa referred to in Kalhaṇa's lists of hill Rājās.

[1] See *Rājat.* vii. 590 note.
[2] See *Rājat.* viii. 501 note.

The Rājās of Cambā, the ancient CAMPĀ, on the other hand figure often in the Kaśmīr Chronicle.[1] Their territory has since early times comprised the valleys of the sources of the Rāvī between Kāngra, the ancient Trigarta, and Kāṣṭhavāṭa. The ancient Rājpūt family which rules this hill state to the present day, often intermarried with the Lohara dynasty which reigned in Kaśmīr.

To the west of Campā and south of Bhadrāvakāśā lay the chiefship of VALLĀPURA, the modern Ballāvar.[2] Its rulers are repeatedly referred to in Kalhaṇa's narrative and retained their independence as petty hill-chiefs till the rise of the Jammu family early in this century. 'Ballāwar' was known also to Albērūnī.

Of the political organization of the hill-territories between Vallāpura in the south-east and Rājapurī in the north-west we have no distinct information. The Hindu inhabitants of this tract including Ballāvar call themselves now *Dogrās* and their country *Dugar*. This name is traditionally derived from Skr. **Dvigarta*,[3] but this term is nowhere found in our historical texts and has probably been created for the sake of an etymology in analogy of the ancient Trigarta. The original of the name seems to be *Durgara*.[4]

It is very probable that the region of the lower and middle hills between the limits indicated was already in old times divided into a number of small chiefships. Of these some eleven seem to have existed up to the time of the extension of the Sikh power into the Panjāb Kōhistān.[5] They were all absorbed in the growing state of Jammu which was originally one of them.

Among these small hill-chiefs of limited territory but ancient descent, we have probably to class the Ṭhakkura Deṅgapāla on the Cināb who gave his daughter to the pretender *Bhikṣācara* in marriage.[6] Also the Rājā of KĀNDA must probably be located in this hill tract.[7] Other Ṭhakkuras in this region are mentioned as levying blackmail on Prince Mallārjuna when on his march to Kaśmīr from the plains.[8] Immediately at the foot of the Bānihāl Pass in the territory of VIṢALĀṬĀ we find the castle of a 'Khaśa lord,' who gave shelter to Bhikṣācara and at the time

1 Compare *Rajāt.* vii. 218 note, and CUNNINGHAM, *Anc. Geogr.*, p. 141.

2 See *Rājat.* vii. 220 note, and CUNNINGHAM, *Anc. Geogr.* p. 135.

3 See DREW, *Jummoo*, pp. 43 *sq.*

4 Compare the Cambā copperplate, edited by Prof. KIELHORN, *Ind. Ant.*, 1888, p. 9.

5 See CUNNINGHAM, *Anc. Geogr.* pp. 133 *sqq.*, where a useful synopsis of the hill-states in the central portion of the Panjāb Kōhistān is given.

6 See *Rājat.* viii. 554 *sqq.*

7 See note vii. 590.

8 viii. 1989 *sqq.*

was evidently independent.[1] Temporarily the Khaśas of the hills immediately south of the Pīr Pantsāl Range may have acknowledged the suzerainty of strong Kaśmīr rulers. But during the greatest part of the period which is known to us from historical sources, they appear to have held their own and rather to have levied subsidies, *i.e.*, blackmail from the Kaśmīr rulers.[2]

Frontier territories to the south-west and west.

82. Some of the petty hill states here referred to must have been included in the region which by its ancient name was known as DĀRVĀBHISĀRA. I have elsewhere shown that this name, as a geographical term, was applied to the whole tract of the lower and middle hills between the Candrabhāgā and Vitastā.[3] The combined names of the Dārvas and Abhisāras are found already in the ethnographical lists of the Mahābhārata and Bṛhatsaṁhitā. A chief of this region figures by the ethnic appellation of *Abisares* in the accounts of Alexander's Indian campaign.

The most important of the hill-states in this territory was certainly the ancient RĀJAPURĪ represented by the modern district of Rajaurī.[4] It comprised the valleys drained by the Tohī of Rajaurī and its tributaries. Owing to its position on the most direct route to the Panjāb, Rājapurī was necessarily often brought into political relations with Kaśmīr. When Hiuen Tsiang passed through it, the 'kingdom of Rājapurī' was subject to Kaśmīr. From the 10th century onwards we find the chiefs of Rājapurī as practically independent rulers, though the Chronicle tells us of numerous expeditions undertaken into their territory by the later Kaśmīr kings. The upper valley of the Tohī of Prūnts leading to the Pīr Pantsāl Pass, was included in Rājapurī territory.[5] Here lay probably the famous strong-hold of *Rājagiri* known also to Albērūnī.[6]

Rājapurī took its name from its capital which is repeatedly mentioned by Kalhaṇa and undoubtedly occupied the position of the present town of Rajaurī.[7] The ruling family belonged to the Khaśa tribe. Its descendants were the Muhammadanized Rājpūt chiefs who retained this territory down to the present century.

On the north-west Rājapurī was adjoined by the territory of

1 viii. 1665 *sqq.*
2 See *Rājat.* viii. 2283 note.
3 See note i. 180.
4 For a detailed account, see *Rājat.* vi. 286 note.
5 See *Rājat.* viii. 959 note.
6 See vii. 1270 note.
7 See vii. 973 *sqq.*

LOHARA.[1] The chief valley belonging to this hill-state was the present Loh³rin which we have already visited when examining the Tōṣ³maidān route. Lohara became important for Kaśmīr from the end of the 11th century when a branch of its ruling family acquired the Kaśmīr throne. Subsequently this branch succeeded also to Lohara which thus became united to Kaśmīr under the same ruler. As the ancestral home and stronghold of the dynasty, the castle of Lohara has played a great part during the last reigns related by Kalhaṇa. The chiefs of Lohara are distinctly named as belonging to the Khaśa tribe.

Lohara seems to have included in those times also the town and district of PARṆOTSA corresponding to the present Pūnch or Prūnṯs (the Kaśmīrī form), in the lower valley of the Tohī (Tauṣī).[2] In Hiuen Tsiang's time Parṇotsa gave its name to the whole hill-state which was then tributary to Kaśmīr. The Muhammadan Rājās of Prūnṯs, closely related to the Khakhas of the Vitastā Valley, remained more or less independent till the conquest of Mahārāja Gulāb Singh. Their territory forms now a separate small principality under a branch of the Jammu family. Parṇotsa being on the great route to the western Panjāb is often mentioned in the Kaśmīr Chronicles. The large percentage of the Kaśmīrī element in the population of Prūnṯs attests the closeness and ancient date of its relations to Kaśmīr.

The hills to the south-west of Prūnṯs were held till early in this century by petty chiefs, known as the Rājās of *Kōṭlī*. It is possible that the small hill-state of KĀLIÑJARA repeatedly referred to by Kalhaṇa and known also to Ferishta, lay in this direction.[3]

Proceeding to the north-west of Parṇotsa we come to the valley of the Vitastā. This, as has already been shown above, was held in old times as an outlying frontier-district of Kaśmīr as far down as BOLYĀSAKA, the present Buliāsa. Beyond this point it was occupied by Khaśas. In Muhammadan times the valley was divided between several petty chiefs of the Khakha and Bomba clans who seem to have acknowledged as their nominal head the Khakha Rājā of Muẓaffarābād. The portion of the valley between Muẓaffarābād and Buliāsa bore the old name of DVĀRAVATĪ from which the modern designation of this tract, *Dvārbidī*, is derived (see above, § 53).

1 Compare for the history of *Lohara* and its various localities, Note *E*, *Rājat.* iv. 177, reproduced in *Ind. Ant.*, 1897, pp. 225 *sqq.*

2 See for details note iv. 18. Hiuen Tsiang's reference shows that the town of *Parṇotsa* must be older than the time of Lalitāditya to whom Kalhaṇa ascribes its foundation.

3 See note *Rājat.* vii. 1256.

Uraśā-Hazāra.

83. Further to the west and beyond the course of the Vitastā after its great bend, lay the ancient kingdom of Uraśā.[1] Its greatest part is comprised in the British district of Hazāra, between the Vitastā and Indus. It is the Οὔαρσα or Ἄρσα of Ptolemy; its ruler figures as *Arsakes* in the accounts of Alexander's campaigns. Hiuen Tsiang mentions the territory by the name of *Wu-la-shi* and found it tributary to Kaśmir. Though this dependence seems soon to have ceased we find Uraśā often referred to in the Rājataraṅgiṇī. The account of Saṁkaravarman's ill-fated expedition in this direction furnishes us with a clue as to the position of the old capital of Uraśā. It probably lay between the present Mansahra and Abbottabad.[2] Kalhaṇa's notice of an expedition undertaken in his own time mentions in Uraśā the town of ATYUGRAPURA.[3] I have shown in my note on the passage that this locality is probably represented by the modern *Agrōr*, situated on the border of Hazāra towards the 'Black Mountains.' We have an intermediary form of the name in Ptolemy's Ἰθάγουρος, given as the designation of a town in Uarsa or Arsa north of Taxila.

In Muhammadan times Uraśā was included in the region known as Pakhlī. This is defined by Abū-l-Faẓl as comprising the whole of the hill territory between Kaśmīr in the east and the Indus on the west.[4] To Pakhlī belonged also the lower valley of the Kiṣangaṅgā and the valleys of the streams which flow into the latter from the Kājnāg Range and the mountains to the north-west of Kaśmīr.

Kiṣangaṅgā Valley.

This tract which is now known as *Karnau*, bore the old name of KARṆĀHA. It seems to have been held by small chiefs nominally tributary to Kaśmīr even in later Hindu times.[5] It is but rarely mentioned in the Chronicle. The inhabitants were Khaśas,[6] who are represented by the modern Bomba clans still holding Karnau. Their Rājās were practically independent till the Sikh conquest and often harried the north-western parts of Kaśmīr.[7] The last irruption of the Karnau Bombas and their allies, the Khakha chiefs of the Vitastā Valley, occurred as late as 1846.

[1] For a detailed synopsis of the old notices, see *Rājat.* v. 217 note.
[2] See *Rājat.* v. 217 note and CUNNINGHAM, *Anc. Geogr.*, p. 104.
[3] Compare note viii. 3402.
[4] See *Ain-i-Akb.*, ii. pp. 390 *sq.*
[5] Compare *Rājat.* viii. 2485 note.
[6] See viii. 2756, 3006, 3088.
[7] Compare for the modern Karnau, BATES, *Gazetteer*, p. 228.

The valley of the Kiṣangaṅgā above its junction with the Karnau river and as far as Śārdi, forms a separate tract known as *Drāva*. This is possibly the DURĀṆḌA mentioned in a passage of Kalhaṇa's Chronicle.[1] The northernmost portion of the tract seems to have been a dependency of Kaśmīr even during the later Hindu reigns. At Śārdi we find the shrine of Śāradā, one of the most sacred Tīrthas of old Kaśmīr. To this as well as an old feudal stronghold in its neighbourhood we shall have occasion to refer thereafter (§ 127).

Through Śārdi leads a route to Cilās on the Indus. But this territory as well as the other portions of the Upper Indus Valley lay apparently quite beyond the sphere of Kaśmīr political influence. Hence we meet nowhere in the Chronicles with their ancient names.

Darad territory.

84. Immediately above Śārdi the valley of the Kiṣangaṅgā turns, as we have seen, into a narrow uninhabited gorge. At the other end of this gorge we reach the territory of the Darads. Their settlements on the Upper Kiṣangaṅgā and its tributaries seem to have formed a separate little kingdom, called by a general name DARADDEŚA in the Chronicle.[2] Its inhabitants who bore Hindu names, more than once attempted invasions of Kaśmīr. DARATPURĪ, 'the town of the Darads,' which was the capital of their chiefs, may have occupied the position of the modern Gurēz (map 'Goorais').[3] The latter is the chief place of the valley where the Nawābs governing it till the Sikh conquest resided. The 'Mlecchа' chiefs who on two occasions figure as the Darad Rājās' allies from the north, were perhaps rulers of other Darad tribes further towards the Indus who had early been converted to Islām.[4]

Bhauṭṭas.

Crossing from the head-waters of the Kiṣangaṅgā to those of the Drās River we arrive in high-level valleys inhabited by people of Tibetan race and language, the *Bhauṭṭas* of the Chronicles. The Rājataraṅgiṇī tells us nothing of the political organization or topography of the Bhauṭṭa territories. It is, however, possible that we have a reference to *Leh*, the capital of Ladākh, in the "foreign country called LOḤ," which Kalhaṇa names in iii. 10.

Nor do the later Chronicles supply us with any details in this direction, though the several invasions which Kaśmīr suffered from this side give Jonarāja and Śrīvara occasion to refer more frequently to the Bhauṭṭas and their rulers. It may, however be noted that Śrīvara

1 See viii. 2709 note.

2 Compare *Rājat.* vii. 911 ; for other references to the Darads, i. 312 note.

3 See vii. 911 note.

4 See viii. 2762 note.

already knows the terms 'Little and Great Bhuṭṭa-land.'[1] They refer to Baltistān (Skardo) and Ladākh which have continued to be known to the present day as 'Little and Great Tibet,' or among Kaśmīrīs as *Lukh Buṭun* and *Buḍ Buṭun*.[2] These terms are in fact of a far older date, as they are found already in the Chinese Annals as *Little and Great Poliu*.[3]

The eastern frontier of Kaśmīr is, as we have seen, formed by a mountain range which runs from the Zōjī-Lā almost due south towards Kaṣṭᵃvār. Along this range on the east lies a long narrow valley marked as Maru-Wardwan on the map (in Kaśmīrī *Maḍivāḍvan*). It is drained by a large river which joins the Cināb near the town of Kaṣṭᵃvār. Owing to its high elevation and the rigours of its climate it is inhabited only by a scanty population. According to Mr. Drew's race map and other authorities, this consists now chiefly of Kaśmīrīs. Whether this was already the case in old times, is uncertain. The Valley is nowhere mentioned in our old Kaśmīrian texts.[4] It is hence doubtful whether it belonged to Kaśmīr territory in Hindu times. Yet Abū-l-Faẓl counts it among the Pargaṇas of Kaśmīr.[5] Beyond it to the east stretches an uninhabited belt of high mountains and glaciers, dividing Maḍivāḍvan from the Tibetan tracts of Sūru and Zanskar. To the south we reach once more the territory of Kāṣṭhavāṭa from which our present survey has started.

[1] See *Śrīv.* iii. 445 (*Sūkṣmabṛhadbhuṭṭadeśau*).

[2] *Buṭun* (connected with the ethnic term *Buṭᵃ* < Bhauṭṭa; see above, § 58), is the Kaśmīrī term for Tibet in general.

[3] Compare A. Rémusat, *Nouveaux mélanges asiatiques*, i. p. 194; and Sir H. Yule, *Cathay*, p. lxx.

[4] The Trisaṁdhyāmāhātmya which refers to the Valley as *Maḍavāṭira*, cannot claim any particular antiquity.

[5] See *Āīn-i-Akb.*, ii. p. 369.

Section II.—Ancient Political Divisions.

Kramarājya, Maḍavarājya.

85. The Valley of Kaśmīr to which we may now return has from early times been divided into two great parts, known by their modern names as *Kamrāz* and *Marāz*. These terms are derived from Skr. Kramarājya and Maḍavarājya, which are found very frequently in the Rājataraṅgiṇī as well as the later Chronicles.[1] The original form of the modern Kamrāz was known to the tradition of the Śrīnagar Paṇḍits generally. With the old name Maḍavarājya, however, I found only those few acquainted who, like the late Paṇḍit Dāmodara and Paṇḍit Govind Kaul, had specially studied Kalhaṇa's Chronicle.

According to the generally prevailing notion Marāz comprises the districts on both sides of the Vitastā above Śrīnagar, and Kamrāz those below. The present tradition places the boundary of the two great divisions more accurately at the Shērgaṛhi palace. That the boundary was already in old times indicated by a line drawn through the capital is easily proved by an examination of all passages in the Rājataraṅgiṇi and other Chronicles naming Maḍavarājya and Kramarājya. They invariably show localities situated above Śrīnagar in the former and those below in the latter division.

We arrive at the same result on a reference to the Āīn-i Akbarī. Abū-l-Faẓl distinctly informs us that "the whole kingdom was divided under its ancient rulers into two divisions, *Marāj* on the east and *Kamrāj* on the west."[2] He then proceeds to tabulate the thirty-eight Pargaṇas into which Kaśmīr was divided under Akbar's administration, separately under the two main-heads of Marāj and Kamrāj. The city of Śrīnagar is counted with the former, and so are also all Pargaṇas above the capital, while those below are shown in Kamrāj.

The term of Kamrāz has in modern times occasionally been used also in a more restricted sense, for the designation of the Pargaṇas to the west and north-west of the Volur lake. This usage probably arose from the fact that at various periods several of the small Pargaṇas in this portion of the Valley were for administrative purposes grouped together in one Pargaṇa, to which the name Kamrāz was given.[3] This

[1] See my note on *Rājat.* ii. 15.

[2] Compare *Āīn-i-Akb.*, ii. p. 368.

[3] Thus Abū-l-Faẓl's table seems to show that in Akbar's time the old Pargaṇas of Uttar, Lolau, Hamal and Maṣch[1]pūr were embodied in the large Pargaṇa of 'Kamrāj;' see *Āīn-i Akb.*, ii. p. 371. In Moorcroft's and Baron Hügel's list the Pargaṇa Kamrāj includes Uttar, Hamal and Maṣch[1]pūr. Owing to the frequent changes

circumstance explains the different accounts referred to by Prof. Bühler in his note on the term Kramarājya.[1]

Though the terms Maḍavarājya and Kramarājya are so often employed in the Chronicles, we have no distinct evidence of the two divisions having in Hindu times formed separate administrative units or provinces. It is possible that this was the case at one or the other period. But Abū-l-Faẓl's account as well as the usage traceable from his time to the present day show that the terms in their popular geographical significance could maintain themselves quite independently of actual administrative divisions.[2]

Administrative Districts.

86. The whole of the Valley has from an early date been subdivided for administrative purposes into a considerable number of small districts known in recent times as 'Pargaṇas.' Their ancient designation was *viṣaya*.[3] The number, names and limits of these subdivisions have been subject to considerable variations during the period over which our documents extend.

The great majority of the Pargaṇas known in recent times can be safely assumed to have existed already during the Hindu rule. This is proved by the fact that the names of numerous Pargaṇas are found in their ancient forms already in the Rājataraṅgiṇī and the other Chronicles. But these texts do not furnish us anywhere with a complete list of the Pargaṇas. It is hence impossible for us to restore in full detail the map of the administrative sub-divisions for any particular epoch

of the Pargaṇa divisions (see below) the extent of the 'Pargaṇa Kamrāj' has also varied from time to time.

[1] See *Report*, p. 11.

[2] The only trace I can find of a general division of Kaśmīr other than that into Maḍavarājya and Kramarājya, is contained in an unfortunately corrupt and fragmentary passage of the Lokaprakāśa, iv. It seems to divide the twenty-seven Viṣayas or Pargaṇas of Kaśmīr (see below) into three tracts, viz. (i) *Kramarājya* from Khōyāśrāmika onwards (Khuy?hōm, the old Khūyāśrama is meant); (ii) *Madhyamarājya* from the Cānūlā [river ?] to Lahara or Lār; (iii) *Maḍavarājya* from *Śrīvantaka* (?).

The text is in a deplorable condition and the explanation of Cānūlā and Śrīvantaka quite uncertain. The former may be the river of doubtful name and identity referred to in Rājat. note v. 109. It appears as if at the time to which the Lokaprakāśa's notice goes back, an intermediate slice of territory had been formed between Kramarājya and Maḍavarājya and dubbed *Madhyamarājya* 'the middle province.' Five thousand villages out of the 66,063 with which the text credits Kaśmīr, are attributed to this intermediate division.

[3] Compare for the term *viṣaya Rājat.* v. 51; viii. 1260, 1413, 2697.

The expression Pargaṇa may have been introduced by the Moghal administration. Its Skr. original **paragaṇa* is not found in the Chronicles.

during Hindu times. The Lokaprakāśa, it is true, tells us of the division of Kaśmīr into twenty-seven Viṣayas and enumerates some nineteen of the latter. But several of the names are so corrupt as to be beyond recognition, while others bear a distinctly modern look. In any case it is impossible to fix the date to which this notice may belong or to judge of its authenticity.[1]

Abū-l-Faẓl's account is the first which presents us with a systematic statement of Kasmīr Pargaṇas. It is of special interest because it shows us how their list could be increased or re-adjusted within certain limits according to fiscal requirements or administrative fancies. The return of Āsaf Khān reproduced by Abū-l-Faẓl shows thirty-eight Pargaṇas, while the earlier one of Qāẓī 'Alī contained forty-one. The difference is accounted for by the amalgamation of some and the splitting-up of other Pargaṇas. The Pargaṇas varied greatly in size, as shown by the striking contrasts in the revenue-assessments. Thus, *e.g*, Paṭan was assessed at circ. 5300 Kharwārs, while the revenue from 'Kamrāj' amounted to 446,500 Kharwārs.

The number of Pargaṇas had changed but little during Mughal and Paṭhān times. For the Sikhs on their conquest of the Valley seem to have found thirty-six as the accepted traditional number. But there had been various changes in the names and extent of these Pargaṇas. These changes became still more frequent under the Sikh administration, as is seen by a comparison of the lists given by Moorecroft (1823), Baron Hügel (1835) and Vigne (circ. 1840). They all show a total of thirty-six Pargaṇas but vary among themselves in the names of individual Pargaṇas.

These frequent changes and redistributions of the Pargaṇas continued during Dogrā Rule. The most accurate list I am able to refer to for this most recent period, is that given by Major Bates. It shows a total of forty-three Pargaṇas for the year 1865.[2] Subsequent reforms introduced Taḥsīls after the fashion of British provinces with a view to reducing the number of sub-divisions. The latest list shows eleven Taḥsīls.[3] In their constitution little regard was paid to the historical divisions of the country. Fortunately, however, Kaśmīrīs are as con-

[1] Of the Lokaprakāśa's Viṣayas *Khoyāśramī, Samālā, Laharī, Auladīya, Nīlāśa, Khaḍūvīya* correspond clearly to the Khūyāśrama, Samālā, Lahara, Holaḍā, Nīlāśva, Khaḍūvī of the Rājataraṅgiṇī. *Ekena, Devasāvi* may possibly be corruptions for Evenaka and Devasarasa. *Krodhana, Dvāviṁśati, Bhṛṅga, Phāgvā* probably represent the modern Pargaṇas of Kruhin, Dūnts, Bring, Phākh. *Cālana, Vitastha, Satrava, Svanavāri, Nīlā, Hārī, Jalahaḍīya*, are quite uncertain.

[2] See *Gazetteer*, p. 2 *sqq*.

[3] Compare the sketch-map attached to Mr. Lawrence's *Valley*.

servative in their topographical nomenclature as in many other matters. The old Pargaṇa names are hence still in ordinary use and likely to remain so for some time to come.[1]

The absence of a complete list of Pargaṇas for an earlier period and the changes in their constitution during more recent times make a systematic exposition of the ancient territorial divisions impracticable. In a separate note I have given a comparative table of the Pargaṇa lists we possess since Akbar's time. There too I have indicated the ancient equivalents of the Pargaṇa names, as far as they can be traced in the Sanskrit Chronicles.[2] We shall have occasion to refer to these names and their history in the course of our detailed survey of ancient localities in the Valley.

Density of population in old Kaśmīr.

87. The large number of administrative sub-divisions which as we have seen goes back to an early date, may be taken as an indication of the dense population then occupying the Valley. We have no means of forming any accurate estimate as to the number of the population which the country contained in Hindu times. But there is every reason to believe that even at a later period it was far larger than at the present day. The existence of a very great number of deserted village-sites, in all parts of the country, the remains already alluded to of a far more extended system of irrigation, the number of great temple ruins, and the uniform tradition of the people,—all point to the same conclusion.

The present century has witnessed in Kaśmīr a series of appalling famines and epidemics, which wrought terrible havoc in the mass of the rural population particularly. The last famine, 1878–79, alone is supposed to have removed three-fifth of the population from the Valley.[3] The political vicissitudes of the first half of the century had a baneful influence on the economical condition of Kaśmīr and brought about an extensive emigration both among the industrial and agriculturist classes. Notwithstanding all these trials the population which in 1835 was estimated at about 200,000 souls, had risen to 814,000 according to the census of 1891.

These figures indicate great powers of recuperation. Yet it is held by competent judges that the present agricultural population is by no means sufficient even for the land actually under cultivation. It would hence manifestly be hazardous to make any guess as to the numbers

1 The Survey of India maps indicates the approximate extent of the Pargaṇas recognized in the fifties.

2 See Supplementary Note *BB*.

3 Compare for this and other statistical details Mr. LAWRENCE's *Valley*, p. 223 *sqq*.

which the country might have supported in the most prosperous times of Hindu rule.

The fact of Kaśmīr having possessed a far greater population in ancient times helps to explain the curious traditional verse which puts the number of villages of Kaśmīr at 66,063. The verse is found twice in the Lokaprakāśa and still lives in the oral tradition of the Brahmans throughout the Valley. It has been reproduced from the latter in Paṇḍit Sāhibrām's Tīrthasaṁgraha.[1] That it can claim some antiquity is evident from the allusion made to the number in Jonarāja's Chronicle.[2]

Though that figure must have at all times implied a considerable exaggeration, it is nevertheless characteristic of the popular notion on the subject. Even Sharīfu-d-dīn whose information, collected about A.D. 1400, is generally accurate and matter-of-fact, records: "It is popularly believed that in the whole of the province—plains and mountains together—are comprised 100,000 villages. The land is thickly inhabited."[3] It is curious that Mirzā Ḥaidar who had ruled Kaśmīr himself copies this statement without modification or dissent.

Section III.—The old and new Capitals.

88. The ancient divisions of Kramarājya and Maḍavarājya are separated by a line drawn through Śrīnagar. This fact as well as the great historical interest attaching to Śrīnagar as the capital of the country make it the convenient starting-point for our survey. The history of Kaśmīr has always been reflected as it were in that of its capital. The site of the latter has not changed for more than thirteen centuries. It is thus easy to account for the ample historical data which enable us to restore in great part the ancient topography of Śrīnagar and to trace back the city's history to the time of its foundation.

Śrīnagara in the Hiuen Tsiang's time.

Hiuen Tsiang who visited the Kaśmīr capital about A.D. 631, and whose record is the earliest we possess, found it already in the position of the present Śrīnagar. He describes it as situated along the

[1] *Ṣaṣṭir grāmasahasrāṇi ṣaṣṭir grāmaśatāni cai ṣaṣṭir grāmās trayo grāmā hyetat Kaśmīramaṇḍalam* ॥; comp. Lokaprakāśa, *Ind. Studien*, xviii. p. 375.

[2] See *Jonar.* (Bo. ed.), 153.

[3] See *Tārīkh-i-Rashīdī*, p. 430. Ritter who reproduces the passage of the Zafarnāma from De la Croix's translation, shows the number of villages as 10,000; see *Asien*, ii. p. 1123. It may be noted in passing that according to the Census of 1891 the number of villages in Kaśmīr was then reckoned at 2870.

east bank of a great river, *i.e.* the Vitastā, 12 or 13 *li* long from north to south and 4 or 5 *li* broad from east to west. About 10 *li* to the south-east of this, "the new city," the pilgrim notices a Buddhist convent which lay between a high mountain on the north and the site of 'the old city' on the south.

It is the merit of General Cunningham to have first recognized that the situation here indicated for the new capital of Hiuen Tsiang's time corresponds exactly to that of the modern Srīnagar.[1] A glance at the map shows that the position and dimensions ascribed by Hiuen Tsiang to the new city apply closely to that part of Srīnagar which occupies the right or eastern riverbank, and which, as we shall see, forms the older portion of the city. The two and a half miles represented by the 12 or 13 *li* of the Chinse measurement, agree accurately with the length of the city within its ancient limits along the eastern bank of the Vitastā. The estimate of its breadth at somewhat less than one mile (4 or 5 *li*) is equally correct.

Purāṇādhiṣṭhāna.

89. The position of 'the old city' is marked by the present village of *Pāndrēṭhan* which derives its name from the appellation PURĀṆĀDHIṢṬHĀNA, meaning 'the Old Capital.' It lies to the south-east of Srīnagar just as Hiuen Tsiang says, at the south foot of a mountain spur which rises with bold slopes to a height of about 3000 feet above the village. Measured from the nearest point of old Srīnagar, the distance to the presumptive site of the monastery between Pāndrēṭhan and the steep hill-side is exactly two miles or 10 *li*.

The history of 'the Old Capital' is so closely connected with that of Srīnagara that it will be useful to acquaint ourselves first with the data bearing upon it. The name of PURĀṆĀDHIṢṬHĀNA meets us first in Kalhaṇa's account of the reign of King Pravarasena I. (or Sreṣṭhasena) who is said to have erected there a shrine known as that of Siva *Pravareśvara*.[2] At the beginning of the tenth century the minister Meruvardhana built at Purāṇādhiṣṭhāna a Viṣṇu temple called after his own name. This has been rightly identified by General Cunningham with the well-preserved little temple which still stands in the village of Pāndrēṭhan and has often been described by European travellers.[3]

1 Gen. CUNNINGHAM's identification was first indicated in his paper on the architecture of Kaśmīr temples, *J. A. S. B.*, 1848, p. 283. For a fuller account, see *Anc. Geogr.*, pp. 93 *sqq.*

2 See *Rājat.* iii. 99 note, where detailed references have been given regarding the site.

3 See v. 267 note, also for descriptions of the temple.

Even in Kalhaṇa's own time pious foundations are recorded at this ancient site.

The identity of Pāndrēṭhan with the site named in the Chronicle as 'the Old Capital' is proved by ample evidence. It is indicated in the old gloss on Rājat. v. 267 and is still known to Paṇḍit tradition. Śrīvara in describing the flight of some troops which had been defeated in Śrīnagar and were retiring along the Vitastā to the east, speaks of the road from the Samudrāmaṭha (Sudarmar on the right bank of the river near the second bridge) to *Pūrvādhiṣṭhāna* as covered with the corpses of the slain.[1] It is clear that by the latter designation which also means 'the Old Capital,' he refers to our present Pāndrēṭhan. This name itself is the direct phonetic derivative of *Purāṇādhiṣṭhāna*.[2]

Aśoka's Śrīnagarī.

90. General Cunningham has assumed that 'the Old Capital' marked by the site of Pāndrēṭhan was in reality the ancient ŚRĪNAGARĪ which Kalhaṇa mentions as the capital founded by the great Aśoka.[3] His assumption was based on another passage of the Chronicle which mentions the foundation of the shrine of Jyeṣṭharudra at Śrīnagarī by Jalauka, the son of Aśoka. General Cunningham thought he could recognize this shrine in the extant temple on the top of the Takht-i Sulaimān hill, below which at a distance of about one and a half miles Pāndrēṭhan is situated.

I have shown in my note on the passage that no reliance can be placed on the alleged tradition which General Cunningham had adduced as the sole proof of his location of the shrine. Yet at the same time the evidence recorded by me proves that Jyeṣṭharudra must have been worshipped either on the hill itself or in its close vicinity. Accordingly Aśoka's Śrīnagarī may safely be looked for in the same neighbourhood. Our present data do not allow us to decide with absolute certainty whether its site was at Pāndrēṭhan or elsewhere. But there are at least sufficient indications to make General Cunningham's view appear very tempting and probable.

1 See *Śrīv.* iv. 290.

2 The Ks. derivative of Skr. *Purāṇa* is *prāṇ*^{i} 'old'; this forms, with assimilation of the initial double consonant, the first part, *Pān-*, of the modern name. The elision of the second *ā* in the assumed intermediary form * P[u]*rān*[*ā*]*dēṭhan* is accounted for by the influence of the stress accent which lies on the second syllable of the modern name. The development of the combination *nd* into *ndr* is paralleled by similar cases in other Indo-Aryan Vernaculars; comp. Dr. GRIERSON, Phonology of Indo-Aryan Vernaculars, *Z.D.M.G.*, l. p. 37, § 115. The nazalisation of *ē* may be of recent date, as the old gloss of A_2 on Rājat. v. 267 shows the name as *Pāṇḍṛṭhan*, i. e. *Pāṇ*^{i}*dreṭhan*.

3 See Note *C*, i. 124.

There is in the first place the significant name *Purāṇādhiṣṭhāna*, 'the Old Capital,' which shows that the site of Pāndrēṭhan must have once been occupied by an important city. Next it is to be noted that Kalhaṇa's narrative knows nothing of any other capital which might have been founded in this vicinity previous to the new capital built by Pravarasena II. on the site of the present Srīnagar. Lastly we have an indication in the very name *Srīnagara* which Pravaraśena's city has come to bear in general usage instead of its proper and official designation *Pravarapura*.

If Aśoka's Srīnagarī actually lay at or near the present Pāndrēṭhan the transfer of its name to the new capital is most readily accounted for. General Cunningham already has rightly pointed out the numerous analogies for such a transfer furnished by the history of other Indian capitals.[1] Pravarasena's city was practically contiguous to the older Srīnagarī and existed for centuries side by side with it. We can hence easily understand that popular usage retained for the new capital the old familiar designation.[2] Exactly in the same way the several new cities founded by successive kings in the vicinity of Delhi all continued to be known simply by the name "Delhi," though each of them was originally intended to bear the distinctive name of its founder.

Though Purāṇādhiṣṭhāna had sunk to small importance already in Hindu times, extensive remains of ancient buildings can still be traced on the terraced slopes rising immediately to the north and north-east of Pāndrēṭhan. Foundations of old walls, carved slabs, and architectural fragments cover the foot of the hill-side for about one and a half miles. Broken Liṅgas of colossal dimensions are scattered among them. All the remains above ground, however, are far too much decayed to permit of a distinction of individual structures.[3]

The advantages of Pāndrēṭhan as the site for a great city cannot be compared with those offered by the position of Srīnagar. Yet the close vicinity of the Vitastā, coupled with the security from floods which the near hill-slopes afford, must have been appreciated in an earlier

1 See *Anc. Geogr.*, pp. 97 *sq.*

2 The feminine form *Srīnagarī* is used also for the new capital; comp. *Rājat.* i. 104 note. There is thus no difference in the name as applied to both Aśoka's and Pravarasena's cities. *Srīnagara* or *Srīnagarī* means the "City of Srī", *i.e.* of Lakṣmī, the Goddess of Fortune. For a whimsical etymology of European growth, which has turned Srīnagar into the "City of the Sun", see above § 4, note.

3 Compare for an account of these ruins, CUNNINGHAM, *J. A. S. B.*, 1848, pp. 283 *sq.*, *Anc. Geogr.* 95 *sq.* [The remarks made in the latter place as to the supposed cause of the desertion of Purāṇādhiṣṭhāna rest on a misinterpretation of certain Rājataraṅgiṇī passages. The reconstruction of an alleged 'Pravareśvara symbol' at Pāndrēṭhan, *J. A. S. B.*, 1848, pp. 324 *sq.*, is also unsupported by evidence.]

period when probably the riveraine flats of the valley were less drained. The small semi-circular glens which are formed between projecting spurs both north and east of the present village, with their gentle slopes offer convenient building sites. The fertile shores of the Ḍal are also within easy reach of Pāndrēṭhan through the gap in the hill-range which separates the Takht-i Sulaimān hill from the greater heights to the east. It is probably in this direction that we have to look for the Saṅghārāma mentioned by Hiuen Tsiang in connection with 'the old city.'

Pravarasena's capital.

91. Kalhaṇa's Chronicle furnishes us with a full account of the origin of the new city which was the capital of the Kaśmīr in his time and destined to remain so to the present day.[1] Kalhaṇa attributes the foundation of this capital to King Pravarasena II. The topographical details of his description make it clear beyond all doubt that its site was that of the present Srīnagar.

The identity of the latter with Pravarasena's town was duly recognized by General Cunningham who referred to the close agreement between the general features of Kalhaṇa's description and the situation of the present capital. He also pointed out that Kalhaṇa distinctly mentions as one of the pious buildings founded in Pravarasena's city that very *Jayendravihāra* in which Hiuen Tsiang resided during his long stay in the Kaśmīr capital.[2] Subsequently Professor Bühler noticed the survival of several old local names for parts of the modern city which also prove its identity with Pravarasena's capital.[3] The most convincing evidence, however, is contained in the long list of ancient buildings and localities which Kalhaṇa mentions in Pravarasena's town. In the course of our survey we shall be able to identify many of them within the modern Srīnagar and its environs.

The attribution of this new capital to King Pravarasena rests on equally strong proof. Through a chain of references extending over nearly twelve centuries we can trace the use of the name PRAVARAPURA, shortened (*bhīmavat*) for *Pravarasenapura*, as the official and correct designation of the city occupying the site of the present Srīnagar. We have found this appellation already in the record of the T'ang Annals going back to the commencement of the eighth century. It is also found in the works of Kṣemendra, Bilhaṇa, and numerous other Kaśmīrian authors. It has continued to be used to the present day in colophons of Sanskrit Manuscripts, in horoscopes and similar documents.[4]

1 See *Rājat.* iii. 336–363.

2 See *Anc. Geogr.*, p. 97; also *Rājat.* iii. 355 note.

3 Compare *Report*, p. 16.

4 For detailed references see my note *Rājat.* iii. 339–349. *Śrī-Pravarapure* for

The date of King Pravarasena II. whose name the above designation of the new capital was intended to preserve, cannot be fixed with accuracy. Various historical and numismatic indications, however, make it probable that he ruled at some period of the 6th century. Thus we can easily understand that at the time of Hiuen Tsiang's visit (A.D. 631) Śrīnagara or Pravarapura was still the 'new city.'

Legend of foundation of Pravarapura.

92. The traditional account of the foundation of Pravarapura as recorded by Kalhaṇa is of considerable interest. Though largely interwoven with legendary matter it preserves for us a series of exact topographical data. Kalhaṇa's story is contained in verses 336–349 of the Third Book, and runs briefly as follows.[1]

When King Pravarasena II. had returned from his victorious expeditions abroad, he desired to found a new capital which was to bear his name. He was then residing in the city of his grandfather Pravarasena I., *i.e.*, in Purāṇādhiṣṭhāna.[2] From there the king went forth at night in order, as the text says, "to ascertain in a supernatural way the proper site and the auspicious time for the foundation of the new city." On his way he reached a stream which skirted a burning ground, and was illuminated by the glow of funeral pyres. Then on the other bank of the stream there appeared to him a demon of terrible form. Promising him fulfilment of his desire, the demon invited the king to cross over to his own side by the embankment he was preparing for him. Thereupon "the Rākṣasa stretched out his own knee from the other bank, and thus caused the water of the Mahāsarit to be parted by an embankment (Setu)." The courageous Pravarasena drew out his dagger (*kṣurikā*), cut with it steps into the flesh of the Rākṣasa, and thus crossed over to the place which has since been known as *Kṣurikābala*. The demon then indicated to him the auspicious time and disappeared, after telling him to build his town where he would see the measuring line laid down in the morning. This line (*sūtra*) of the Vetāla the king eventually discovered "at the village of *Sārīṭaka* at which the goddess *Sārikā* and the demon *Aṭṭa* resided." There he built his city in which the first shrine erected was the famous one of Śiva *Pravareśvara*.

Śrīpravarasenapure is often written in the abbreviated form *Śrīpre* in the formulas of the Lokaprakāśa, almanacs, etc. Kalhaṇa often uses the simple *Pura* for Parvarapura and *Nagara* for Śrīnagara.

1 For all detailed references in connection with this story, note iii. 339–349 should be consulted.

2 That *Purāṇādhiṣṭhāna* is meant is proved by iii. 99. There Kalhaṇa, speaking of a foundation of Pravarasena I. in his capital, by a kind of anachronism uses the designation of Purāṇādhiṣṭhāna.

Keeping in view the details of the ancient topography of Śrīnagar, we can still follow up step by step the localities by which the legend here related leads King Pravarasena to the site of his new city. We have already seen that the *Mahāsarit* is the stream now known as Ts̲ūṇṭh Kul which flows from the Ḍal into the Vitastā. Near its confluence with the Vitastā which we have also found already mentioned as a Tīrtha, there existed, until the times of Mahārāja Raṇbīr Singh, a much frequented Hindu burning Ghāṭ. It was undoubtedly of ancient date. Kalhaṇa relates how the body of King Uccala, murdered in his palace at Śrīnagar, was hurriedly cremated at the burning place situated on the island at the confluence of the *Mahāsarit* and *Vitastā*.[1] It is certain that the island of Māy⁹sum (Skr. Mākṣika-svāmin) is meant here, at the western end of which the Mahāsarit or Ts̲ūṇṭh Kul falls into the Vitastā.

The stream flowing from the Ḍal is bounded on its northern bank by an old embankment which stretches from the west foot of the Takht-i Sulaimān close to the high bank of the Vitastā near the Second Bridge. This embankment which is the most substantial at or around Śrīnagar and known only by the general designation of *Suth* (from Skr. *setu*), 'dyke,' is undoubtedly of very early date. It protects the whole of the low-lying portions of the city on the right river-bank as well as the floating gardens and shores of the Ḍal which would otherwise be exposed to annual inundations from the Vitastā. A tradition still heard by Mr. Vigne ascribed the construction of this embankment to King Pravarasena.[2] It is indeed evident that its construction was a necessary condition for the safety of the newly founded city.

Several topographical indications warrant the conclusion that it was this old dyke in which the popular legend recorded by Kalhaṇa recognized the leg and knee of the demon. A glance at the map shows that the eastern portion of the 'Suth' turns sharply at a right angle and thus curiously resembles a bent knee. *Kṣurikābala* was the name of the place where Pravarasena according to the legend was supposed to have reached firm ground after crossing the stream. I have shown that this name in the form of its Kaśmīrī derivative *Khuḍ⁹bal* still attaches to the city quarter which lies at the western end of the Suth.[3]

Finally it will be seen from the map that Kalhaṇa's words regarding the 'Setu' dividing the waters of the Mahāsarit, describe exactly the present embankment which has on one side the Ts̲ūṇṭh Kul and on the other side the various marshes and canals fed by the Mār. It

[1] See viii. 339.

[2] See VIGNE, *Travels*, ii. p. 69.

[3] See note iii. 339-349.

has been shown above that this second outflow of the Ḍal also shared the old name of Mahāsarit.[1]

Old limits of Pravarapura.

93. The name of the village *Sārīṭaka* where the demon showed to the king the proper site for his city, has long ago disappeared. Its position, however, is sufficiently marked by the mention of the goddess *Sārikā*. The latter, a form of Durgā, has since ancient times been worshipped on the hill which rises to the north of the central part of Srīnagar and is still called after her. The modern name of the hill, *Hār*ª*parvat*, is the regular phonetic derivative of Skr. *Sārikāparvata*. By this name it is designated in the latter Chronicles and Māhātmyas.[2]

Another passage of the Rājataraṅgiṇī shows that the term *Vetālasūtrapāta*, 'the demon's measuring line,' clearly connected with the above legend, was also in later times applied to the limits of the oldest part of Pravarapura[3]. But our materials do not enable us to ascertain these limits in detail. Kalhaṇa it is true, has not failed to specify them, as he mentions the temples of *Vardhanasvāmin* and *Viśvakarman* as marking the extreme ends of Pravarasena's city[4]. Unfortunately the position of neither of these structures can now be traced.

So much, however, is clear that the new city was at first confined to the right bank of the river. Kalhaṇa tells this distinctly,[5] and those sites and structures which he particularly mentions in his description of Pravarasena's capital, are all found as far as they can be identified, on the right bank. The account of Hiuen Tsiang and the T'ang Annals show that even in the 7th century Pravarapura extended mainly along the eastern bank of the river.[6]

Kalhaṇa's description of Pravarapura.

Kalhaṇa follows up his account of the foundation of the city with a brief description of its splendours[7]. He notes the extravagant story of its having once counted thirty-six lakhs of houses, and

[1] Compare § 65.

[2] See note iii. 339–349. *Hār*ª is the Kaśmīrī name of the goddess *Sārikā* as well as of the *Sārikā* bird (Maina); comp. BÜHLER, *Report*, pp. 16 *sq.*

Panjābīs and other foreign visitors from India have by a popular etymology turned the 'Hill of Sārikā' into the 'Hill of Hari (Viṣṇu)' or the 'Verdant Hill.' The latter interpretation could be justified only on the principle of *lucus a non lucendo*; for verdure is scarce indeed on the rocky faces of the Sārikāparvata. DR. BERNIER already, *Travels*, p. 398, was told this popular etymology, probably by his friends from Delhi.

[3] See vi. 191 note.

[4] iii. 357.

[5] iii. 358.

[6] See above, §§ 8, 10.

[7] iii. 357–363.

refers to the regularly arranged markets with which its founder had provided it. The city of his own time still boasted of "mansions which reached to the clouds" built, no doubt, mostly of wood just as the mass of private houses in modern Śrīnagar.[1]

When he mentions "the streams meeting, pure and lovely, at pleasure-residences and near market streets," he means evidently the numerous canals from the Ḍal and Anch[1]ār lakes which intersect the suburbs and also pass through the heart of the city. They and the river still serve as the main thoroughfares for the market traffic, and all principal Bazars are built along their banks.[2] The Śārikāparvata receives due mention as "the pleasure-hill from which the splendour of all the houses is visible as if from the sky." Nor does he forget to praise the cool water of the Vitastā which the citizens find before their very houses on hot summer-days.

Finally he refers to the abundance of magnificent temples with which successive kings had adorned Pravarapura, and of which so many are particularly mentioned in his narrative. Of the number and imposing appearance of these structures we can even at the present day form some idea if we examine their massive remains which meet us in every part of modern Śrīnagar. The high embankments which now line the river's course within the city, are mainly composed of carved slabs, columns and other ancient stone materials. Their profusion and imposing dimensions must even to a superficial observer suggest an idea of the architectural splendour of ancient Śrīnagar.

Advantages of the site of Śrīnagar.

94. It can scarcely be the result of chance that Pravarasena's city has escaped the fate of so many Indian capitals, of being superseded by later foundations.

There had indeed not been wanting attempts on the part of later rulers to transfer the capital to other sites which they had chosen for their own cities. The great Lalitāditya, then Jayāpīḍa, Avantivarman,

1 Both Mirzā Ḥaidar and Abū-l-Faẓl speak with admiration of the many lofty houses of Śrīnagar, built of pine wood. This material was used, then as now, as being cheap and more secure against earthquakes. According to Mirzā Ḥaidar "most of these houses are at least five stories high and each story contains apartments, halls, galleries and towers" (*Tārīkh-i-Rashīdī*, p. 425). That the mass of private dwellings in Śrīnagar were already in Hindu times constructed of wood, is shown by *Rājat.* viii. 2390. The many disastrous fires recorded point to the same conclusion.

2 Useful and convenient as these canals undoubtedly are, it is rather difficult to concede to them now the epithets of 'pure and lovely.' They add, however, greatly to the picturesqueness of the city and certainly make the want of carriage roads less felt.

and Saṁkaravarman, had successively endeavoured to effect this object. The great ruins of Parihāsapura, Jayapura and Avantipura show sufficiently that the failure of the first three kings was not due in any way to deficient means or want of purpose.

Of Lalitāditya the Chronicle distinctly records that he proposed, Nero-like, to burn down the ancient capital to assure the predominance of his own creation, Parihāsapura. And the long list of splendid edifices erected at the latter place during his own reign shows plainly that for a time at least that monarch's pleasure had succeeded. Yet each one of these temporary capitals speedily sank into insignificance, while Pravarapura continued to be the political and cultural centre of Kaśmīr down to the present day.

We can safely attribute this exceptional position of Śrīnagar to the great natural advantages of its site. Occupying a place close to the true centre of the Valley, Śrīnagar enjoys facilities of communication which no other site could offer. The river along which the city is built provides at all seasons the most convenient route for trade and traffic, both up and down the Valley. The two lakes which flank Śrīnagar, offer the same facilities for the fertile tracts which lie immediately to the north. The lakes themselves furnish an abundant supply of products which materially facilitate the maintenance of a large city population. The great trade route from Central Asia debouches through the Sind Valley only one short march from the capital.

Natural defences of Śrīnagar.

Nor can we underrate the security which the position of Śrīnagar assures both against floods and armed attack. The neck of high ground which from the north stretches towards the Vitastā and separates the two lakes, is safe from all possible risk of flood. It is on this ground, round the foot of the Śārikā hill, that the greatest part of the old Pravarapura was originally built. The ancient embankment which connects this high level ground with the foot of the Takht-i-Sulaimān hill sufficed to secure also the low-lying wards fringing the marshes of the Ḍal. A considerable area, including the present quarters of Khān[a]yār and Rāṇ[i]vōr (Skr. *Rājānavāṭikā*), was thus added to the available building ground on the right bank and protected against all ordinary floods.

The frequent sieges which Śrīnagar underwent during the last reigns related by Kalhaṇa, give us ample opportunity to appreciate also the military advantages which the city's position assured to its defenders. With the exception of a comparatively narrow neck of dry ground in the north, the Śrīnagar of the right river-bank is guarded on all sides by water. On the south the river forms an impassable line of defence.

The east is secured by the Ḍal and the stream which flows from it. On the west there stretch the broad marches of the Anch[1]ār divided from the Vitastā by a narrow strip of firm ground.

From the north, it is true, the city can be approached without passing such natural obstacles. But the map shows that just to the north of the Śarikā hill inlets from the two lakes approach each other within a few thousand feet. The narrow passage left between them could at all times easily be guarded. It is curious to note that the successful attacks on the city of which the Chronicle tells us, were delivered from the north, treachery or the defenders' weakness having opened this passage.[1]

The later and smaller portion of Śrīnagar occupying the left river-bank, does not share the same natural advantages as the old one. The present level of the ground on which it stands appears to have been raised gradually by the accumulated débris of centuries. We do not know exactly when the extension of the city in this direction began. The number of ancient sites on this side is comparatively small. The royal residence was transferred to it only in the reign of Ananta (A.D. 1028-63). There too we find a natural line of defence. It is the Kṣiptikā or Kuṭ[a]kul which flows round the western edge of this part of the city and is also often mentioned in the accounts of the later sieges.

Section IV.—Ancient sites of Śrīnagara.

Hill of Śārikā.

95. Having thus reviewed the origin and the general position of the Kaśmīr capital, we may proceed to a brief survey of the more important ancient sites which our available materials permit us to trace in it. We can conveniently start on our circuit from the Hill of Śārikā to which the legendary account of the city's foundation had taken us.

The goddess Śārikā which has given to the hill its name, has been worshipped since ancient times on the north-west side of the hill. Certain natural markings on a large perpendicular rock are taken by the pious to represent that kind of mystical diagram which in the Tantraśāstra is known as *Śrīcakra*.[2] This 'Svayaṁbhū' Tīrtha is still a much frequented pilgrimage place for the Brahmans of the city and has been so probably since early times.[3] The Śārikāmāhātmya now in use relates

[1] Compare for Uccala's entry into Śrīnagar, vii. 1539 *sqq.*; that of Sussala, viii. 944 *sqq.*; compare also note viii. 1104–1110.

[2] Compare *Rājat.* note i. 122, regarding the worship of such diagrams.

[3] Compare *Jonar.* (Bo. ed.) 472, 767.

that the hill was carried to its present position by Durgā who had taken the shape of a Śārikā bird. The goddess is supposed to have thus closed a gate of the Daityas dwelling in hell. This legend is alluded to already in the Kathāsaritsāgara.[1]

Another ancient designation of the Hārᵃparvat is 'Hill of Pradyumna' (*Pradyumnapīṭha,-giri,-śikhara*, etc.), often found in the Chronicles and elsewhere.[2] The Kathāsaritsāgara accounts for the origin of this name by a story which connects the hill with the love of Uṣā and Aniruddha, the son of Pradyumna. Kalhaṇa mentions a Maṭha for Pāśupata mendicants which King Raṇāditya built on the hill. The eastern slopes of the latter are now occupied by extensive buildings connected with the famous Ziārats of Muqaddam Ṣāhib and Ākẖūn Mullā Shāh. It is probable that these Muhammadan shrines have taken the place of Hindu religious buildings, as at so many old sites of Kaśmīr.

Close to the foot of the southern extremity of the hill lies a rock which has from ancient times received worship as an embodiment of Gaṇeśa, under the name of BHĪMASVĀMIN. A legend related by Kalhaṇa connects this 'Svayambhū' image with Pravarasena's foundation of Śrīnagar.[3] From regard for the pious king the god is there said to have turned his face from west to east so as to behold the new city. The rock is covered by the worshippers with so thick a layer of red lead that it is not possible to trace now any resemblance to the head of the elephant-faced god, still less to see whether it is turned to the west or east. In fact, if we are to believe Jonarāja, the rock image has subsequently changed its position yet a second time. This Chronicler relates that Bhīmasvāmin from disgust at the iconoclasm of Sikandar Būtshikast has finally turned his back on the city.[4] This last turn would, no doubt, most satisfactorily account for the present amorphous look of the sacred rock.[5]

There is nothing in the Chronicles that would lead us to assume that the hill of Śārikā was ever fortified in Hindu times. The great bastioned stone-wall which now encloses the hill and the ground around its foot (Nāgar-nagar), was built by Akbar as an inscription still extant over the main-gate proclaims.[6] The fort which now crowns the summit of the hill, is of even more modern origin.

[1] See lxxiii. 107 *sqq.*

[2] See *Rājat.* iii. 460 note.

[3] See iii. 352 note.

[4] See *Jonar.* (Bo. ed.), 766.

[5] Compare Fourth Chron. 939 *sqq.*

Temple of Pravareśvara.

96. A short distance to the south-east of the Bhīmasvāmin rock, and outside Akbar's fortress, lies the Ziārat of Bahāu-d-dīn Ṣāhib, built undoubtedly with the materials of an ancient temple. The cemetery which surrounds it contains also many ancient remains in its tombs and walls. At the south-west corner of this cemetery rises a ruined gateway built of stone-blocks of remarkable size, and still of considerable height. This structure is traditionally believed by the Srīnagar Paṇḍits to have belonged to the temple of Śiva PRAVAREŚVARA which Kalhaṇa mentions as the first shrine erected by Pravarasena in his new capital.[1]

An old legend related by Kalhaṇa and before him already by Bilhaṇa, makes the king ascend bodily to heaven from the temple of Pravareśvara. Bilhaṇa speaks of the temple as "showing to this day a gap above, resembling the gate of heaven through which King Pravara bodily ascended to heaven."[2] Kalhaṇa, writing a century later, also saw at the temple of Pravareśvara "a gate resembling the gate of heaven." Its broken stone roof was supposed to mark the king's passage on his way to Śiva's abode.

This tradition still attaches to the roofless stone-gate above described, which may indeed be the very structure seen by Bilhaṇa and the Chronicler. As far as its architecture is concerned, it might well belong to the earliest monuments of Srīnagar. It owes its preservation perhaps to the exceptional solidity of its construction and the massiveness of its stones. Stone-blocks measuring up to sixteen feet in length with a width and thickness equally imposing were no convenient materials for the builders of Muhammadan Ziārats, Ḥammāms, etc., who have otherwise done so much to efface the remains of ancient structures in Srīnagar. The position of the ruin is very central and might well have been chosen by the founder of Pravarapura for a prominent shrine in his new city.

Position of Raṇasvāmin temple.

Not far from Bāhāu-d-dīn Ṣāhib's Ziārat to the south-west stands the Jāmi' Masjīd, the greatest Mosque of Srīnagar. Around it numerous ancient remains attest the former existence of Hindu temples. Proceeding still further to the south-west in the midst of a thickly built city quarter, we reach an ancient shrine which has remained in a comparatively fair state of preservation probably owing to its early conversion into a Ziārat. It is now supposed to mark the resting place of the saint styled Pīr Ḥājī Muḥammad. It consists of an octa-

[1] See *Rajat.* iii. 350 note.

[2] See *Vikram.* xviii. 23.

gonal cella of which the high basement and the side walls are still well-preserved. The quadrangular court in which it stands is enclosed by ancient walls and approached by ornamented gateways.

The position of this shrine has suggested to me its possible identity with the ancient temple of Viṣṇu RAṆASVĀMIN which Kalhaṇa mentions as founded by King Raṇāditya.[1] This temple must have enjoyed considerable celebrity till a comparatively late period. Mańkha refers to it as an object of his father's devotion and Jonarāja in his comments on the passage speaks of Viṣṇu Raṇasvāmin as one of the chief shrines of Pravarapura.[2]

In his own Chronicle Jonarāja indicates this temple as the furthest point up to which Zainu-l-'ābidīn carried the canal flowing through *Jainanagarī*.[3] The latter locality corresponds to the Śrīnagar quarters of Sangīn Darwāza and Naushahr, and the canal itself is the one now known as *Lach^{a}m Kul*.[4] It brings the waters of the Sind River *viâ* Ạmburhēr to the northern suburbs of Śrīnagar, and after flowing past the Jāmi' Masjid empties itself into the Mār canal near the bridge called Kāḍ^{i} Kad^{a}l. In the corner formed by the two canals stands the ruined temple above described. If it could be shown that the present termination of the Lach^{a}m Kul is the same which Jonarāja knew in the middle of the fifteenth century, the identity of those remains with the Raṇasvāmin temple might be considered as certain.

Bhaṭṭārakamaṭha; Diddāmaṭha.

97. Crossing the Mār to the south we reach the city quarter known as *Braḍ^{i}mar*, occupying the right bank of the river between the Fourth and Fifth Bridge. It derives its name from the ancient BHAṬṬĀRAKAMAṬHA which is repeatedly referred to in the Rājataraṅgiṇī as a building of considerable size and strength.[5] Bilhaṇa too notices it specially in his descripton of Śrīnagar. Like other Maṭhas built originally to serve the purposes of a Sarai, it was used on occasion as a place of defence. Queen Diddā sent her infant son there at the time of a dangerous rising.

1 *Rājat.* iii. 453 *sq.* note.

2 See *Śrīkaṇṭhacar.* iii. 68.

3 See *Jonar.* 872.

4 Compare *Rājat.* iii. 453–454 note. The Lach^{a}m Kul is mentioned by Abū-l-Faẓl, ii. p. 355. It probably took its name (equivalent to *Lakṣmīkulyā) from Lakṣmī, the queen of Shahābū-d-dīn, in whose honour the quarter of Lakṣmīnagarī was found in the vicinity of the present Sangīn Darwāza; see *Jonar.* 407 *sq.*

5 See *Rājat.* vi. 240 note; viii. 2426; *Vikram.* xviii. 11. For the derivation of *Braḍ^{i}* from *Bhaṭṭāraka* comp. *Brāṛ^{i}nambal* < *Bhaṭṭāranaḍvalā*, below. That Bhaṭṭārakamaṭha was the old name of this locality, is known to the tradition of the Paṇḍits; see BÜHLER, *Report*, p. 16.

The Chronicle shows us often the Maṭhas of Srinagar utilized as places of refuge in the times of internal troubles, occasionally also turned into prisons.[1] We may hence conclude that they were substantially built, probably like modern Sarais in the form of detached quadrangles, and thus better adapted for defence than other city-buildings.

That Maṭhas more than once left their names to the city-quarters in which they stood, is shown by the designation of other wards. Thus the large quarter of *Did^{a}mar* which forms the western end of the city on the right river-bank, retains the name of the DIDDĀMAṬHA.[2] It was built by Queen Diddā for the accommodation of travellers from various parts of India. As a local name Diddāmaṭha meets us often in the later Chronicles. Above Did^{a}mar we find near the Sixth Bridge the quarter of *Balaṇḍimar*.[3] It represents in all probability the *Balāḍhyamaṭha* of the later Chronicles which Jonarāja mentions as having been built by Balāḍhyacandra under King Rājadeva in the 13th century.[4]

Skandabhavana; Naḍavana.

A little to the north of the Sixth Bridge lies the Mahalla known by the name of *Khand^{a}bavan*. It has received its appellation from the ancient Vihāra of SKANDABHAVANA, a foundation of Skandagupta whom Kalhaṇa mentions among the ministers of Pravarasena II.'s successor Yudhiṣṭhira.[5] The site of the Vihāra has been traced by me in the close vicinity of the Ziārat of Pīr Muḥammad Bāsur. Certain ancient remains there were locally known and worshipped till the middle of the present century as a Tīrtha sacred to Skanda.[6]

The ground immediately to the north-east of Khand^{a}bavan is now an open waste space used partly for Muhammadan graveyards. It seems to have been unoccupied already in old times. For it was chosen as the burning place for the widows of the murdered king Sussala when a rebel force hovering around the capital rendered the usual burning ground on the island of Mākṣikasvāmin inaccessible.[7]

The quarter of *Narvor* still further to the north is probably identical with the old NAḌAVANA, mentioned by Kalhaṇa as the site of a Vihāra built by one of King Meghavāhana's queens. I have shown in my note on the passage that the modern name goes back to a form

[1] Compare *Rājat.* vi. 223; viii. 374, 1052, 2309.

[2] See *Rājat.* vi. 300 note.

[3] Its old name could not be shown on the map owing to want of room.

[4] See *Jonar.* 82.

[5] See iii. 380.

[6] Compare Note *K*, vi. 137, also for the temple of *Parvagupteśvara* which stood close by.

[7] *Rājat.* viii. 1441 *sq.*

*Naḍavāṭa.[1] The termination *vāṭa* 'garden,' frequent in Kaśmīr local names, may safely be taken as the equivalent of *vana* in Kalhaṇa's form of the name.

Bridges of old Śrīnagara.

98. Before we continue our survey further up the river, it will be useful to make a brief reference to the bridges which connect the two river-banks within the city. Śrīnagar has now seven bridges across the Vitastā. Their number has remained unchanged for at least five hundred years.

Already Sharifu-d-dīn had heard that of the thirty boat-bridges constructed across the great river of Kaśmīr, there were seven in the town of Śrīnagar. The boats were bound together by chains, and through the bridges a way could be opened for the river traffic.[2] Sharīfu-d-dīn's notice is of interest because it shows clearly that down to the end of the Hindu period permanent bridges across the Vitastā where unknown in Kaśmīr.

I had been led to the same conclusion by an examination of the Rājataraṅgiṇī passages bearing on the subject.[3] Kalhaṇa distinctly says of the two bridges the construction of which he specially records, that they were built with boats. Elsewhere this inference may be drawn from the rapidity with which the bridges are broken at the approach of the enemy or in danger of fire.[4]

Bṛhatsetu.

The first bridge of this kind is ascribed by Kalhaṇa to Pravarasena II. who built the 'Great Bridge' (*Bṛhatsetu*) in his new capital. "Only since then is such construction of boat-bridges known."[5] This 'Great Bridge' is subsequently mentioned in connection with a great conflagration which destroyed the city in the time of Sussala (A.D. 1123). This fire arose at the southern end of Śrīnagar, and Kalhaṇa mentions that the smoke first rising from Mākṣikasvāmin: Māyūsum had scarcely been noticed from the 'Bṛhatsetu' when the fire was already spreading over the whole city.[6] Kalhaṇa evidently refers to the 'Great Bridge' as a comparatively distant point from Mākṣikasvāmin. Considering that the river forms an almost straight reach from this locality to the present Fourth Bridge, it appears to me likely that Pravarasena's bridge was somewhere in the vicinity of the latter. The position is in the

1 Compare *Rājat.* iii. 11 note.
2 See *Tārīkh-i-Rashīdī*, p. 431.
3 See note iii. 354.
4 See *Rājat.* vii. 909, 1539; viii. 1182; *Śrīv.* i. 308, 720; ii. 70, 122.
5 *Rājat.* iii. 354.
6 Compare *Rājat.* viii. 1171-72 note.

very heart of the city. It is just here that Zainu-l-'ābidīn subsequently constructed the first permanent bridge over the Vitastā named after him Zaina Kadal (*Jainakadali*).[1]

Another old boat-bridge had been established by Harṣa just opposite to his palace.[2] The latter as we shall see was situated on the left bank somewhere near the present Second Bridge (Haba Kadal). The bridge proved fatal to Harṣa's fortunes, because it enabled the rebels to make their final and successful assault on the palace.

There can be little doubt that the first permanent bridge across the Vitastā was of wood and showed the same peculiar cantilever construction which the Kaśmīr bridges have preserved to this day. The latter have attracted the attention of all modern travellers and have often been described.[3] But it is curious that none of them can be traced back beyond the time of Zainu-l-'ābidīn. The explanation may lie in the fact that that stone-architecture in which the engineers of the Hindu period were so proficient, did not permit of the construction of bridges with a sufficient span. For their Muhammadan successors working chiefly in wood it was easier to overcome this difficulty.

Among the most characteristic features of the river-scene as it now presents itself within Śrīnagar, are the numerous wooden bathing cells moored before all city Ghāṭs. They have been there already in Hindu times. For Kalhaṇa mentions more than once the *snāna-koṣṭhas* of the river.[4] From a humorous sketch of city-life which Kalhaṇa draws for us, we can see that they formed, then as now, the favourite meeting-place of the idle and curious.[5]

Eastern quarters of Śrīnagara.

99. Resuming our walk up the river-bank we pass the remains of more than one old temple near the present Ziārats of Baḍ Shāh (Zainu-l-'ābidīn), Shāh Hamadān and elsewhere. But we have no data for their identification. An old site is marked by the present Ghāṭ Sōmayār, below the Second Bridge, which represents the SOMATĪRTHA of the Rājataraṅgiṇī.[6] The place is still visited as a Tīrtha, and some old Lingas are found by the river-side. The quarter in which the Somatīrtha lies, is known as *Sudarmar*. It owes its name to the SAMUDRĀMAṬHA built by Samudrā, the queen of Rāmadeva, in

1 See *Śrīv.* i. 231 *sq.*, 296.

2 *Rājat.* vii. 1549.

3 See, *e.g.*, VIGNE, *Travels*, ii. 23; LAWRENCE, *Valley*, p. 37.

4 Compare *Rājat.* viii. 706, 1182, 2423. Also Kṣemendra, *Samay.* ii. 38, know the term *snānakoṣṭhaka* which lives in the present Kś. *śrānʊkuṭh*.

5 See *Rājat.* viii. 706–710.

6 See *Rājat.* viii. 3360 note.

the 13th century. The numerous passages in which the Samudrāmaṭha is mentioned by the later Chronicles, makes this identification quite certain.[1]

A little higher up, if we can trust local tradition, stood the ancient temple of VARDHAMĀNEŚA mentioned already in King Saṁdhimat's reign. The site so designated by the Purohitas of the adjoining Mahalla is close to the Mal^{a}yār Ghāt. I have referred already in a previous note to the curious manner in which an ancient Linga supposed to be that of Vardhamāneśa was recovered a few years ago from a neighbouring Mosque and a Māhātmya composed for the newly established shrine.[2]

The confluence of the Tsūṇṭh Kul or Mahāsarit with the Vitastā we have also had occasion to notice.[3] It is the Tīrtha now known as MĀRĪSAṀGAMA. Beyond it lies the great island of *Māy^{a}sum*, the ancient MĀKṢIKASVĀMIN, now chiefly occupied by the houses and camps of European residents and visitors. From the way it is referred to by Kalhaṇa, it appears that it was already partly inhabited in old times.[4] Following up the right bank of the Mahāsarit above the junction we reach the quarter of *Khuḍ^{a}bal* already identified with the *Kṣurikābala* of King Pravarasena's story.

Here begins the old embankment or *Setu*, noticed in connection with the latter.[5] To the north of this embankment stretches an extensive marsh fed by canals coming from the Ḍal and known as *Brāṛ^{i}nambal*. It is the *Bhaṭṭāranaḍvalā* of the Chronicle into which the body of one of Harṣa's ministers was thrown after his execution.[6]

At the eastern end of the Setu where it joins the rocky foot of the Takht-i Sulaimān hill, there has been for at least a century a gate through which the Tsūṇṭh Kul flows out from the lake. It is closed at times of flood when the Vitastā rises higher than the level of the Ḍal. It is highly probable that this gate is very old and contemporary with the construction of the embankment itself. Beyond it lies the suburb of *Drug^{a}jan*. This is identified in an old gloss of the Rājataraṅgiṇī with DURGĀGALIKĀ, where according to tradition the blind King Yudhiṣṭhira I. was imprisoned after his abdication.[7]

[1] See *Jonar.* 111; *Śrīv.* iv. 121, 169, 290; Fourth Chron. 504, 618.

[2] See above, § 31 note 2.

[3] See above, § 65.

[4] See *Rājat.* iv. 88 note.

[5] Compare § 92.

[6] See *Rājat.* vii. 1038. *Nambal*, from Skr. *naḍvalā*, is the regular Ks. word for 'marsh.' *Brāṛ^{i}* is a direct phonetic derivative of Skr. *bhaṭṭāra* 'god.'

[7] See *Rājat.* ii. 4.

Leaving the Setu where it makes its great bend and going north across low ground flanked by marshes, we reach the quarter of *Nāvᵉpūr*. The bridge which leads here over the Mār or Mahāsarit, is repeatedly mentioned as NAUPURASETU by Śrīvara, in connection with later sieges of Śrīnagar.[1] By breaking it, the south-eastern parts of the city were rendered more secure. Continuing our route to the north we come to the great suburb of *Rāṇᵉvōr*. It is traversed by numerous canals coming from the Ḍal. Kalhaṇa mentions it repeatedly by its ancient name of RĀJĀNAVĀṬIKĀ as a place largely inhabited by Brahmans. Their solemn fasts (*prāyopaveśa*) gave no small trouble to King Sussala in his worst straights.[2] Rāṇᵉvōr has continued to the present day a favourite place of residence for city Brahmans.

Left river bank.

100. We have now completed our circuit of the ancient city as far as it lay on the right bank of the river and may proceed to the smaller and later portion which occupies the left bank. Just opposite to the 'Mārīsaṁgama' stands the Shērgaṛhi, the modern palace of the Dogrā rulers. Its site was apparently first chosen by the Paṭhāu governors for their fortified residence.

Immediately below the palace the Kuṭᵃkul or *Kṣiptikā* branches off from the river. We have already noticed its value as a line of defence for this part of the city.[3] The quarter of *Kāṭhūl* which lies next between the Kuṭᵃkul and the river is of ancient date. It is mentioned as *Kāṣṭhīla* by Kalhaṇa and other writers, Bilhaṇa speaking of it particularly as a locality inhabited by Brahmans.[4]

Site of Royal Palace.

At the northern end of the Kāṭhūl quarter and close to the present Second Bridge, we must assume the palace of the later Hindu kings to have stood. Its position is indicated by an interesting passage of the Rājataraṅgiṇī which informs us that King Ananta (A. D. 1028–63) abandoned the palace of the former dynasties and transferred the royal residence to the vicinity of the shrine of SADĀŚIVA.[5] The new site was adhered to by subsequent kings probably till long after Kalhaṇa's time. The mention of the Sadāśiva shrine and the fre-

[1] See *Śrīv.* iv. 122, 243.

[2] See *Rājat.* viii. 756, 768, 809. For the phonetic relation of *Rāṇī* < Skr. *Rājāna*, see viii. 756 note; *vōr* is common in Ks. local names and derived from Skr. *vāṭikā* 'garden.'

[3] See above, § 67.

[4] See *Rājat.* viii. 1169 note, and *Vikram.* xviii. 25.

[5] Compare *Rājat.* viii. 186-187, and for detailed proof of the identification, the note thereon.

quent references to the Kṣiptikā as flowing near to the royal palace (*rājadhānī*) enable us to fix the position of the latter with fair accuracy. In the note on the above passage I have shown that the Sadāśiva temple stood opposite to the Samudrāmaṭha which occupies the right river bank just below the Second Bridge. Exactly in the position thus indicated we find now an ancient Liṅga, on the river Ghāṭ of Puruṣ[a]yār, which the tradition of the local Purohitās knows by the name of *Sadāśiva*.

It is in this neighbourhood, then, that the palace stood which had witnessed so many tragic scenes related in the last two Books of Kalhaṇa's Chronicle. Its great height is specially referred to by Bilhaṇa. This suggests that it was in part at least built of wood, just like a later palace described by Mirzā Ḥaidar.[1] "Sultān Zainu-l-'ābidīn built himself a palace in the town which in the dialect of Kashmīr is called *Rājdān* [i.e., Skr. *rājadhānī*]. It has twelve stories, some of which contain fifty rooms, halls and corridors. The whole of this lofty structure is built of wood." This construction of the palace would well explain the rapidity with which it was burned down by the pretender Uccala on his final attack upon Harṣa.[2] We can thus also understand why there are no particularly striking remains at the site which could be attributed to the ruins of this royal residence.

The last-named incident gives Kalhaṇa occasion to mention also some other data regarding the royal palace. Close to it was a garden in which Harṣa and his ill-fated son Bhoja enjoyed a deceptive rest before the rebels' last assault.[3] The gardens near the palace are also elsewhere mentioned. Harṣa had their trees cut down because they obstructed the view, and at a later time the besieging Ḍāmaras fed their camp-fires with wood brought from the same gardens.[4] Even at the present day there are numerous old gardens across the Kṣiptikā close to the site where the palace once stood. In front of the palace was the boat-bridge already mentioned which the king had himself constructed, and which was the scene of his last desperate struggle.[5]

Where the old palace stood which was abandoned by King Ananta, we cannot say with accuracy. It is, however, probable that its site was in the old part of Pravarapura on the right bank. Kalhaṇa mentions it twice as *purāṇarājadhānī* ('the old palace'), but gives no particulars.[6] Its deserted ground was built over with a Maṭha in Kalhaṇa's own time.

1 See *Tārīkh-i-Rashīdī*, p. 429.
2 See *Rājat.* vii. 1565 *sq.*, 1583.
3 *Rājat.* vii. 1538 *sqq.*
4 *Rājat.* vii. 1223; viii. 1056.
5 See *Rājat.* vii. 1539, 1549.
6 See *Rājat.* viii. 837, 2417.

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The embankments on the left side of the river as well as the walls of Ziārats show ample remains of ancient buildings. But we have no means of identifying any particular sites. At the western extremity of this part of the city, however, we may locate with some probability the temple of *Kṣemagaurīśvara*, built by Queen Diddā's weak husband Kṣemagupta. Bilhaṇa in his description of S'rīnagar mentions it as an imposing building, the 'Maṇḍapas' of which extended to a 'Saṁgama' of the Vitastā.[1] I have shown elsewhere that the confluence meant is probably that of the Vitastā with the Dugdhasindhu or Chatsakul which lies opposite to the quarter of Diddāmaṭha.[2]

Section V. The Environs of S'rīnagara.

101. Having completed our survey of old S'rīnagara we may now proceed to examine the ancient sites of its environs. They are almost all situated to the north of the Vitastā within the Pargaṇa now known as *Phākh*, and designated as *Phākhuvā* in S'rīvara's Chronicle.[3] It comprises the tract lying between the east shore of the Anchiār, the range towards the Sind Valley and the hills which enclose the Ḍal on the east and south. Owing to the facility of communication across the lake and the manifold attractions of its shores, Phākh seems to have always been a favourite resort for the inhabitants of the capital. This fact is fully illustrated by the numerous places of ancient date which we find dotted around the lake.

The 'Hill of Gopa' (Gopādri.)

Starting from its southernmost corner in the immediate vicinity of the city we come first to the hill popularly known as Takht-i-Sulaimān. Its bold pyramidal form and the old temple which crowns its summit, make this hill a most conspicuous object in the land-scape of S'rīnagar. The present name of the hill, meaning 'Solomon's throne,' is undoubtedly of Muhammadan origin. Its alleged derivation from *Saṁdhimat*, the saintly hero of a well-known legend recorded in the Rājataraṅgiṇī, is nothing but an invention of the Bāchbaṭṭas of S'rīnagar.[4]

1 *Vikram.* xviii. 23.

2 Compare *Rājat.* vi. 172-173 note.

3 *S'rīv.* iv. 306. The Lokaprakāśa writes *Phāgvā* while the modern Māhātmyas of Iśālaya or Iśabar and Sureśvarī affect the form *Phālaka*.

4 The name Takht-i-Sulaimān is common enough in the local nomenclature of Muhammadan countries; compare, *e.g.*, the peak of this name in the Sulaimān

That the ancient designation of the hill was GOPĀDRI is shown beyond all doubt by an interesting passage of Kalhaṇa's Chronicle. It relates how the troops of the pretender Bhikṣācara when thrown back from the city which they had endeavoured to enter after crossing the Mahāsarit, *i.e.*, from the south-east, took refuge on the 'Gopa hill' or *Gopādri*.[1] There they were besieged by the royal troops until a diversion made by Bhikṣācara enable them to retreat to the higher hills in the east by the low neck which connects these with the Takht-i Sulaimān.

Kalhaṇa in the First Book of his Chronicle informs us that King Gopāditya built a shrine of Śiva Jyeṣṭheśvara on the Gopādri.[2] It is difficult not to connect this notice in some way with the extant temple which occupies so prominent a position on the summit of the hill. General Cunningham, it is true, on the strength of an alleged tradition had proposed to identify this temple with the Jyeṣṭharudra shrine which Kalhaṇa mentions as a foundation of Jalauka, Aśoka's son, in the ancient Śrīnagarī.[3] But Prof. Bühler has already shown that there is no genuine tradition regarding the temple among the Śrīnagar Brahmans.[4]

It is certain that the superstructures of the present temple belong to a late period.[5] But the massive and high base on which this temple is raised, and certain parts of the structure are no doubt of a far earlier date. These may well have formed part of a building which in Kalhaṇa's time,—rightly or wrongly, we have no means to judge,—was looked upon as a shrine of Jyeṣṭheśvara erected by King Gopāditya. There is no other ancient ruin on the hill. Nor would the configuration of the latter have admitted at any other point but the summit, of the construction of a shrine of any dimensions. It is of interest to note that the tradition of Abū-l-Faẓl's time distinctly attributed the temple standing on 'Solomon's hill' to the time of Gopāditya.[6]

Kōh, S. of the Gumal Pass. The derivation from Saṁdhimat, referred to by Prof. BÜHLER, *Report*, p. 17, is not supported by any evidence whatever and unknown even to the most modern Māhātmyas.

[1] See *Rājat.* viii. 1104–10 note. That the Takht-i-Sulaimān was called by its ancient name Gopādri, had been surmised already by Pt. Govind Kaul at the time of Prof. Bühler's visit; see *Report*, p. 17. But the decisive evidence of this passage was not known to him.

[2] See i. 341 and note.

[3] *Rājat.* i. 124; *Anc. Geogr.*, p. 95; also above, § 90.

[4] See *Report*, p. 17.

[5] See the remarks of FERGUSSON, *History of Indian Archit.*, p. 282, against Gen. Cunningham's and Major Cole's assumptions who represented the extant temple as one of the earliest buildings in Kaśmīr.

[6] *Ain-i-Akb.*, ii. p. 358.

Tīrtha of Jyeṣṭheśvara.

102. In my note on Rājat. i. 124 I have shown that an old tradition which can be traced back to at least the sixteenth century, connected the Takht hill with the worship of Śiva Jyeṣṭharudra or, by another form of the name, JYEṢṬHEŚVARA (Jyeṣṭheśa).[1] And we find in fact a Liṅga known by this name worshipped even at the present day at the Tīrtha of Jyēṭhēr, scarcely more than one mile from the east foot of the hill.

This Tīrtha which undoubtedly derives its name from Jyeṣṭheśvara, lies in a glen of the hill-side, a short distance from the east shore of the Gagri Bal portion of the Ḍal.[2] Its sacred spring, designated in the comparatively modern Māhātmya as *Jyeṣṭhānāga*, forms a favorite object of pilgrimage for the Brahmans of S'rīnagar. Fragments of colossal Liṅgas are found in the vicinity of Jyēṭhēr and show with some other ancient remains now built into the Ziārats of Jyēṭhēr and Gupᵃkār, that the site had been held sacred from an early time.

It is in this vicinity that we may look for the ancient shrine of Jyeṣṭharudra, which Jalauka is said to have erected at S'rīnagarī. But in the absence of distinct archæological evidence its exact position cannot be determined. It is highly probable that whatever the origin and the date of the temple on the Takht hill may be, it was connected with the worship of Jyeṣṭharudra at Jyēṭhēr. No other Tīrtha is known in the immediate neighbourhood.

The distance of the shrine from the Tīrtha is scarcely greater than that of Lalitāditya's temple at Mārtaṇḍ from the sacred spring in honour of which it was erected. And in both places the distance of the temple is easily accounted for by the more prominent position which was thus secured for it. There is yet another analogy in the case of the two shrines. Both have long ago ceased to be places of popular worship. But the sacred springs, to the presiding deity of which they were dedicated, continue to attract pilgrims though shorn of all splendour of temples and images.

Gopāgrahāra; Bhūkṣīravāṭikā; Thedā.

Kalhaṇa in the same passage which mentions the erection of King Gopāditya's shrine on the 'Gopa hill' makes that prince bestow the 'Gopa Agrahāras' on Brahman settlers from Āryadeśa.[3] The combination of the two local names suggests that by the GOPĀ-

[1] Compare Fourth Chron. 592, 853, 806.

[2] For *Jyeṣṭheśvara* > *Jyēṭhēr* we have exact analogies in *Kapaṭeśvara* > *Kōṭhēr*, *Amareśvara* > *Amburhēr*, etc.

[3] See i. 341. *Agrahāra* is the regular term designating a Jāgīr or piece of land bestowed on individuals or religious corporations, etc.; see note i. 87.

GRAHĀRAS are meant the fertile lands of the present *Gupᵃkār*, between the north foot of the Takht hill and the Ḍal. The name Gupᵃkār may be, in fact, the direct phonetic derivative of the term used by Kalhaṇa.[1]

Our surmise is supported by the reference which Kalhaṇa in the verse immediately following makes to the village BHŪKṢĪRAVĀṬIKĀ. This place is identified by the old glossator A_2 with *Buchᵛvōr*, a small hamlet situated on the narrow strip of land at the rocky north-west foot of the Takht hill. The modern name is clearly derived from Kalhaṇa's form. Gopāditya is said to have removed to this confined and secluded spot Brahmans who had given offence by eating garlic.

The combined mention of Gopādri, Gopāgrahāra and Bhūkṣīravāṭikā in Rājat. i. 341 *sq.* suggests that Kalhaṇa has reproduced here local traditions collected from the sites immediately adjoining the hill. Whether the connection of these localities with King Gopāditya's reign was based on historical fact, or only an old popular etymology working upon the word *Gopa* found in the first two names, can no longer be decided.

Continuing our route along the eastern shore of the Ḍal we come, at a distance of about one mile from Gupᵃkār, to the large village of *Thīd*, prettily situated amid vineyards and orchards. It is the THEDĀ of the Rājataraṅgiṇī, mentioned as one of the places which the pious King Saṁdhimat or Āryarāja adorned with Maṭhas, divine images, and Liṅgas.[2] Abū-l-Faẓl speaks of Thīd as "a delightful spot where seven springs unite; around them are stone buildings, memorials of by-gone times."[3] The remains here alluded to can no longer be traced, but the seven springs (*Saptapuṣkariṇī*) which are also referred to in the Haracaritacintāmaṇi (iv. 40 *sqq.*), are still pointed out.

The cluster of villages which we reach about one and a half miles beyond *Thīd*, and which jointly bear the name *Brāṇ*, can be safely identified with BHĪMĀDEVĪ which Kalhaṇa notices along with Thedā. The Nīlamata knows the sacred site of Bhīmādevī in conjunction with the Sureśvarī Tīrtha which we shall next visit, and in the Haracaritacintāmaṇi it is named with the seven springs of Thedā. The Tīrtha of Bhīmādevī is no longer known, but may be located with some probability at the fine spring near *Dāmpōr* marked now by a Muhammadan shrine.

1 *Gupᵃkār* may go back to a form * *Gupᵃgār*, with assimilation of *g* to the preceding tennis. In Ks. the hardening of *g* to *k* is by no means unknown, see Dr. Grierson's remarks, *Z.D.M.G.*, l., p. 3. * *Gupᵃgār* could easily be traced back to *Gopāgrahāra* through Pr. forms like * *Gupagrār*.

2 See *Rājat* ii. 135 note.

3 *Āin-i-Akb.*, ii. p. 361.

Tīrtha of Sureśvarī.

103. A sacred site of far greater fame and importance is that of the present village of *Iśᵛbar* which lies about two miles further north on the Ḍal shore and a little beyond the Mughal garden of Nishāt. The site was known in ancient times as *Sureśvarīkṣetra* ('the field of Sureśvarī').[1] It was sacred to Durgā-Sureśvarī who is still worshipped on a high crag rising from the mountain range to the east of Iśᵛbar village. The seat of the goddess is on a rugged rock some 3000 feet above the village, offering no possible room for any building. The numerous shrines erected in her honour were hence built on the gently sloping shore of the lake below.

The Tīrtha of Sureśvarī is often referred to in Kalhaṇa's Chronicle and other Kaśmīrian texts as a spot of exceptional holiness. It was particularly sought by the pious as a place to die at. The pilgrimage to Sureśvarī is connected with visits to several sacred springs in and about Iśᵛbar. One of them, *Satadhārā*, is already mentioned by Kṣemendra.[2] It is passed in a narrow gorge some 1500 feet below the rock of Sureśvarī.

Iśᵛbar derives its present name from the shrine of ĪŚEŚVARA which King Saṁdhimat-Āryarāja according to the Rājataraṅgiṇī erected in honour of his Guru Īśāna.[3] An earlier form, *Iśᵛbrōr*, which is found in an old gloss of the Chronicle and evidently was heard also by Abū-l-Faẓl, helps to connect Iśᵛbar and Īśeśvara.[4]

Iśᵛbar is still much frequented as a pilgrimage place. The chief attraction is a sacred spring known as *Guptagaṅgā* which fills an ancient stone-lined tank in the centre of the village. This conveniently accessible Tīrtha is the scene of a very popular pilgrimage on the Vaiśākhī day and has fairly obscured the importance of the mountain seat of Sureśvarī. A ruined mound immediately behind the tank is popularly believed to mark the site of the Īśeśvara shrine. Numerous remains of ancient buildings are found around the sacred springs and elsewhere in the village. They probably belong to the various other temples the erection of which is mentioned by Kalhaṇa at the site of Sureśvarī.[5]

Ṣaḍarhadvana; Tripureśvara.

Passing round the foot of the ridge on which Sureśvarī is worshipped, we come to the small village of *Hārvan* which the old glossator of the Rājataraṅgiṇī identifies with ṢAḌARHADVANA ('the

[1] Compare for *Sureśvarī* and the site of Iśᵛbar, note v. 37.

[2] See *Samay.* ii. 29.

[3] See *Rājat.* ii. 134 note.

[4] *-bar* is a modern contraction for *-brōr*, from Skr. *bhaṭṭāraka*, which in Kaśmīr local names has often taken the place of its synonym *-īśvara*; comp. *e.g.*, Skr. *Vijayeśvara* > Kś. *Vijᵛbrōr*.

[5] See *Rājat.* v. 37, 40 *sq.*; viii. 3365.

wood of the six Arhats'). This place is mentioned by Kalhaṇa as the residence of the great Buddhist teacher Nāgārjuna.[1] The name Hārvan may well be derived from Ṣaḍarhadvana, but in the absence of other evidence the identification cannot be considered as certain. On the hill-side south of the village I observed already in 1888 fragments of ornamented bricks. Since then remarkable remains of ancient brick-pavements have come to light on occasion of excavations made for the new Śrīnagar waterworks.

Proceeding further up the valley of the stream which comes from the Mār Sar lake, we reach, at a distance of about three miles from the Ḍal, the village of *Triphar*. Evidence I have discussed elsewhere, makes it quite certain that it is the ancient TRIPUREŚVARA (Tripureśa).[2] The latter is repeatedly mentioned as a site of great sanctity by Kalhaṇa as well as in the Nīlamata and some Māhātmyas. But it has long ago ceased to be a separate pilgrimage place. A little stream known as the *Tripuragaṅgā* near Triphar is, however, still visited as one of the stations on the Mahādeva pilgrimage.

Kṣemendra in the colophon of his Daśāvatāracarita refers to the hill above Tripureśa as the place where he was wont to find repose and where he composed his work. In Zain-ul-'ābidīn's time Tripureśvara seems yet to have been a Tīrtha much frequented by mendicants.[3] Tripureśvara too possessed its shrine of Jyeṣṭheśvara, and to this King Avantivarman retired on the approach of death.[4] A legend related by the Śarvāvatāra connected the site of Tripureśvara with the defeat of the demon Tripura by Śiva and with the latter's worship on the neighbouring peak of Mahādeva. I have not been able to examine the site and am hence unable to state whether there are any ancient ruins near it.

The whole mountain-ridge which stretches to the south of Triphar and along the Ḍal, bore in ancient times the name of ŚRĪDVĀRA.[5] On the opposite side of the Valley rises the great peak of MAHĀDEVA to a height of over 13,000 feet. Numerous references to it in the Nīlamata, Śarvāvatāra, and other texts, show that it was in old times just as now frequented as a Tīrtha.

We may now again descend the valley towards the north shore of the Ḍal. On our way we pass close to Hārvan the village of Tsatsa where the convenience of modern worshippers has located a substitute for the

[1] See *Rājat.* i. 173 note.
[2] Compare *Rājat.* v. 46 note.
[3] See *Śriv.* i. 402.
[4] See *Rājat.* v. 123 note.
[5] See *Rājat.* viii. 2422.

ancient Tirtha of the goddess Śāradā (see below § 127). Leaving aside the famous garden of Shālimār of which our old texts know nothing,[1] we come to a marshy extension of the Ḍal known as Tēl^{a}bal. The stream which flows through it and which forms a branch of the river coming from the Mār Sar, bore the old name of *Tilaprasthā*.[2]

Hiraṇyapura.

104. The road which takes us from Tēl^{a}bal to the mouth of the Sind Valley is the same which was followed by the pretender Bhikṣācara and his rebel allies on a march to Sureśvarī described in the Rājataraṅgiṇī.[3] The narrow embankment on which they fought and defeated the royal troops, leads across the Tēl^{a}bal marshes.

At the south foot of the ridge which runs down to the opening of the Sind Valley, we find the village of *Raṇyil*, the ancient HIRAṆYAPURA.[4] The place is said by Kalhaṇa to have been founded by King Hiraṇyākṣa. As it lies on the high-road from the Sind Valley to Śrīnagar it is repeatedly mentioned also in connection with military operations directed from that side against the capital. The victorious Uccala when marching upon Śrīnagar, had the Abhiṣeka ceremony performed *en route* by the Brahmans of Hiraṇyapura. It seems to have been a place of importance, since it figures in a fairy-tale related in the Kathāsaritsāgara as the capital of Kaśmīr.[5] A spring a little to the south of the village is visited by the pilgrims to the Haramukuṭagaṅgā and bears in Māhātmyas the name of *Hiraṇyākṣanāga*.

Juṣkapura; Amareśvara.

From near Raṇyil several old water-courses radiate which carry the water of the Sind River to the village lying between the Anch^{i}ār and the Ḍal lakes. One of these canals passes the village of *Zukur*. A tradition recorded already by General Cunningham identifies this place with the ancient JUṢKAPURA. Kalhaṇa names the place as a foundation of the Turuṣka (*i.e.* Kuṣana) King Juṣka who also built a Vihāra there.[6] The Muhammadan shrines and tombs of the village contain considerable remains of ancient buildings.

[1] The first reference to this somewhat over-praised locality which I can find, is in Abū-l-Faẓl who mentions the waterfall or rather the cascades of 'Shālahmār'; see ii. p. 361. The Vitastā-, Iśālaya-, and Mahādeva-Māhātmyas which are of very modern origin, show this fact also by their references to '*Śālamāra*' and the whimsical etymologies which they give for the name (*Māraśālā*, etc.). We might reasonably expect that Jonarāja and Śrīvara in their detailed accounts of the Ḍal would have mentioned the place if it had then claimed any importance.

[2] See *Rājat.* v. 46 note; *Śrīv.* i. 421.

[3] See *Rājat.* viii. 744 note.

[4] For detailed references *see Rājat.* i. 287 note.

[5] See *Kathāsar.* lxv. 215 *sqq.*

[6] See *Rājat.* i. 168 note; *Anc. Geogr.* p. 101.

To the west of Juṣkapura and on the shore of the Anch¹ār lies the large village of Ambarhēr. It is the ancient AMAREŚVARA often mentioned in the Rājatarangiṇī in connection with military operations to the north of Śrīnagar.[1] This is easily accounted for by the fact that the place lay then as now on the high road connecting the Sind Valley with the capital. It took its name from a temple of Śiva Amareśvara which Sūryamatī, Ananta's queen, endowed with Agrahāras and a Maṭha. The ancient slabs and sculptured fragments which I found in 1895 in and around the Ziārat of Farrukhzād Ṣāhib, may possibly have belonged to this temple.

Continuing on the road towards Śrīnagar for about two miles further we come to the large village of Vicār Nāg prettily situated in extensive wallnut groves. A fine Nāga near the village forms the object of a popular Yātrā in the month of Caitra. It is supposed to be an epiphany of the Ailāpattra Nāga who is mentioned also in the Nīlamata. An earlier designation seems to be MUKTĀMŪLAKANĀGA which is given to the locality by Śrīvara and in the Tīrthasaṁgraha.[2] To the west of the village and near an inlet of the Anch¹ār are the ruins of three ancient temples now converted into Ziārats and tombs.[3]

Amṛtabhavana.

Only a quarter of a mile to the east of Vicār Nāg and on the other side of the old canal called Lach^{a}m Kul (*Lakṣmīkulyā) stands the hamlet of *Ânt^{a}-bavan*. In my "Notes on Ou-k'ong's account of Kaśmīr" I have proved that Ânt^{a}bavan derives its name from the ancient Vihāra of AMṚTABHAVANA which Amṛtaprabhā, a queen of Meghavāhana, is said to have erected.[4] Ou-k'ong mentions the Vihāra by the name of *Ngo-mi-t'o-po-wan* which represents a transcribed Prakrit form *Amitabhavana or Āmitabhavana. An ancient mound with traces of a square enclosure around it, which is found between the canal and the hamlet, may possibly belong to the remains of this Vihāra.

Tīrtha of Sodara.

Proceeding to the east of Ânt^{a}bavan for about a mile we come to the large village of *Sudar^{a}bal* situated on a deep inlet of the Ḍal, known as *Sudar^{a}khun*. The name of the village and the neighbouring portion of the lake make it very probable that we have to place here the sacred spring of SODARA.[5] It formed the subject of an ancient legend related by

[1] See *Rājat.* vii. 183 note.

[2] See *Śrīv.* iv. 65. On his authority the name Muktāmūlakanāga ought to have been shown on the map.

[3] Compare for a view of these remains, COLE, *Ancient Buildings*, p. 31.

[4] See *Rājat.* iii. 9 note, and *Notes on Ou-k'ong*, pp. 9 *sqq.*

[5] See *Rājat.* i. 125-126 note. Ks. *-bal* in Sudar^{a}bal means merely 'place.'

Kalhaṇa. King Jalauka had built at Śrīnagarī his shrine of Jyeṣṭharudra whose original place of worship was at Bhūteśvara, below Mount Haramukuṭa. He then wished to have by the side of the new shrine also the Sodara spring which adjoins the site of Bhūteśvara.[1] To fulfil the king's pious desire "there broke forth from a waterless spot a spring which was alike to Sodara in colour, taste and other respects." A golden cup thrown into the original Sodara spring appeared after two and half days in its Avatāra near Śrīnagarī. This miracle removed all doubts as to their identity.

Close to the mosque of Sudar^{a}bal and by the lake shore are two pools fed by perennial springs. These according to a local tradition were in old times visited by numerous pilgrims. Now all recollection of this Tirtha has been lost among the Brahmans of Śrīnagar. But the name of a portion of the village area, *Baṭṭ^{a}pōr*, points to a former settlement of Baṭṭas or Purohitas. It is curious, too, that we find only half a mile from the village the Ziārat of Ḥazrat Bal, perhaps the most popular of all Muhammadan shrines in the Valley. It is supposed to be built over the remains of the miracle-working Pīr Dastagīr Ṣāhib. Is it possible that the presence of this rather ubiquitous saint at this particular spot had something to do with the earlier Hindu Tīrtha?

Section VI.—Northern Districts of Maḍavarājya.

105. Our circuit through the Phākh Pargaṇa has brought us back to the purlieus of the capital. We must leave them now once more and start on our tour through the outlying districts. We may direct it first to the upper half of the Valley, the ancient Maḍavarājya. This again is divided by the Vitastā into two portions, one to the north and east, the other to the south and west of the river. We shall begin with the Pargaṇas on the right bank, starting from Śrīnagar.

District of Khaḍūvī.

The Pargaṇa which adjoins Śrīnagar from the south-east, is now known as Vihi. It extends from near Purāṇādhiṣṭhāna to the spur of Vast^{a}rvan, near Vāṇt^{i}pōr (Avantipura), and comprises a wide semi-circular tract of fertile Karēwa lands. In ancient times the district took its name from the village of Khaḍūvī, the present *Khruv*.[2] The Ḍāmaras of the *Khaḍūvī* district are repeatedly mentioned by Kalhaṇa along with those of Holaḍā, the modern Vular Pargaṇa.

[1] For *Sodara*, the present Nārān Nāg, see notes i. 123; v. 55–59.

[2] Compare *Rājat.* viii. 733 note.

The site of Pāndrēṭhan or Purāṇādhiṣṭhāna has already been fully noticed. About two miles higher up the river lies Pānd^{a}chuk village, with some ancient remains and the traces of a stone bridge-head, probably of late date. The old name of the place is unknown. We pass next by the river the village of Simpōr. This may retain the name of SIṂHAPURA, founded by King Jayasiṁha in Kalhaṇa's time.[1]

Less than two miles to the north-west of Siṁpōr lies the village of *Zevan*, the ancient JAYAVANA. It was correctly identified already by Prof. Bühler on the basis of the happy and exact description given of it by Bilhaṇa.[2] The poet mentions in this "place of high-rising monuments" the "pool filled with pure water, sacred to *Takṣaka*, lord of snakes." This pool still exists in the *Takṣaka Nāga* which is visited annually by the pilgrims to Harṣeśvara.[3]

The mention made by Kalhaṇa in his history of Narapura of the pilgrimage to the Takṣaka spring proves that in old times it must have enjoyed great reputation as a separate Tīrtha. It is in fact the only Kaśmīr Nāga which is distinctly mentioned in the Tīrtha list of the Mahābhārata (iii. lxxxii. 90). Abū-l-Faẓl records the interesting fact that this spring was popularly held to be the place whence the cultivation of saffron flourishing in this neighbourhood originated.[4] In Akbar's time the cultivators, undoubtedly Muhammadans, still worshipped at this fountain at spring time. It was customary to pour cow's milk into it to secure a good omen for the success of the crop. We see that the Takṣaka Nāga long retained his importance with the cultivators as a local divinity.

Khonamuṣa.

About two miles to the north-east of Zevan we come on gently rising ground to the village of *Khun^{a}moh*. It is, as already stated above, the ancient KHONAMUṢA, famous as the birthplace of Bilhaṇa. The latter in the Vikramāṅkadevacarita gives an enthusiastic description of the charms of his rural home.[5] The saffron fields which Bilhana mentions extend close to the lower of the two separate hamlets which form the village. In the upper hamlet is a sacred spring called *Dāmodaranāga* with some sculptured funeral Stêlês and a few fragmentary inscriptions.

On the hill-side above the village issues another Nāga which under

1 See *Rājat.* viii. 2443 note.

2 Compare *Report*, pp. 5 *sq.*; *Rājat.* vii. 607 note; *Vikram.* xviii. 70.

3 See *Rājat.* i. 220 note.

4 See *Āin-i-Akb.*, ii. p. 358.

5 For a detailed and accurate account of the position and remains of Khonamuṣa, see Prof. BÜLLER's *Report*, pp. 5 *sq.* The identity of Khun^{a}moh with the Khonamuṣa of *Rājat.* i. 90, was first pointed out by Gen. CUNNINGHAM, *Anc. Geogr.*, p. 98.

the name of *Bhuvaneśvarī* is visited on the pilgrimage to HARṢEŚVARA. The latter Tīrtha lies on the summit of the high ridge which rises to the north of the village. It consists of a 'Svayambhū' Liṅga situated in a small cave and enjoys considerable popularity. I have not been able to trace its name except in the local Māhātmya and the Tīrthasaṁgraha.

Padmapura.

The chief place of the Vihī Pargaṇa is now the town of *Pāmpṛ*, the ancient PADMAPURA, about four miles south-west of Khun⁹moh.[1] It was founded in the beginning of the 9th century by Padma, the powerful uncle of the puppet king Cippaṭa-Jayāpīḍa. Padma is said by the Chronicle to have also built a temple of Viṣṇu *Padmasvāmin*. To this may possibly belong the scanty remains of an ancient temple which have been described by General Cunningham.[2] Close by is the Ziārat of Mīr Muḥammad Hamadānī, with some fine ancient columns and ornamented slabs which are likely to have been taken from this temple. Also the other Ziārats of the town show similar remains. Padmapura, owing to its central position in a fertile tract, seems to have always been a place of importance and is often mentioned by Kalhaṇa and the later Chroniclers.

Proceeding north-eastwards of Padmapura we pass first *Bāl⁹hōm*, a large village, which in the Lokaprakāśa and Tīrthasaṁgraha figures as *Bālāśrama*. Under a large Deodar near it Bāladevī is now worshipped in the form of an old stone-image. Numerous ancient Stêlês, showing miniature reproductions of temples, are found in the neighbouring rivulets and canals; they were apparently used in recent times as stepping-stones which would account for their preservation. At the foot of a rocky spur which descends from the mountain-range to the north, lies the picturesque village of *Uyan*, once mentioned by Kalhaṇa under the name of OVANĀ.[3] It has a large sulphurous spring visited by the sick.

About two miles further east we reach the large village of *Khruv*, the ancient KHAṬŪVĪ which, as we have seen, gave to the district its former name. There is an abundance of fine springs in and about Khruv; Abū-l-Faẓl mentions them as objects of worship and estimates their number at 360.[4] Above the village a so-called Svayaṁbhū-cakra or mystical diagram is shown on a rock.[5] It is held sacred to Jvālā-

[1] For a detailed notice see *Rājat.* iv. 695 note. The old name of the place is well-known to Śrīnagar Paṇḍits; VIGNE too, *Travels*, ii. p. 31, recognized it correctly.

[2] See *J. A. S. B.*, 1848, p. 274.

[3] See *Rājat.* vii. 295.

[4] *Āin-i-Akb.*, ii. p. 358.

[5] Compare for such diagrams, also designated *Devīcakra* or *Mātṛcakra*, *Rājat.* i. 122 note.

mukhī-Durgā and largely visited by pilgrims. I am, however, unable to trace any old reference to this Tīrtha.

Śanāra.

Only a mile to the south-east of Khruv is the village of *Śār*, until recently the seat of a flourishing iron-industry. Kalhaṇa mentions it by the name of Śanāra as an Agrahāra founded by King Śacīnara.[1] Whatever the historical value of this notice may be, which Kalhaṇa took from Padmamihira, the evidence detailed in my note on the passage proves that the present Śār is intended. An intermediate form of the name is preserved in the *Śnār* of an old gloss. The Ziārat of Khwāja Khiẓr which stands here near several small springs, is built with remains of a Hindu temple; among them is a Liṅga-base some six feet square.

About two miles south-west of Śār are found the well-preserved ruins of a temple near the village of *Ladu* (not marked on Survey map). They have been described by Bishop Cowie,[2] but I am unable to trace any old reference to this shrine in the texts I have examined. It is remarkable for having a circular cella, the only one known to me in Kaśmīr. A small square cella to the east of this temple has been annexed to a neighbouring Ziārat.

Near the south end of the Vihī Pargaṇa and on the river lies the village of *Lat[a]pōr*. An old gloss of the Rājataraṅgiṇī identifies it with Lalitapura, a place founded in honour of King Lalitāditya by his architect.[3] The King according to the Chronicle was not pleased with the attention; in any case no importance seems to have attached to this place. There are no old remains above ground, but the local tradition still tells of King 'Lalitādit' as the founder of a large town on the neighbouring Uḍar.

District of Holaḍā; Avantipura.

106. Passing round the foot of Mount Vast[a]rvan we enter the Pargaṇa of *Vular*, the ancient Holaḍā. This identification is supported, apart from the clear phonetic evidence, by all passages of the Rājataraṅgiṇī which mention Holaḍā.[4] Its feudal barons played a great part in the troubled times of the later Hindu reigns.

Its most important place in old times was undoubtedly the town of Avantipura, founded by King Avantivarman (A.D. 855–883).[5] Its position is marked by the present village of *Vāṇt[i]pōr* on the Vitastā. The

[1] See note i. 100.

[2] See *J. A. S. B.*, 1866, pp. 97 *sqq.*

[3] See *Rājat.* iv. 186.

[4] See *Rājat.* i. 306 note.

[5] See *Rājat.* v. 45 *sq.* note. Its identity with Vāṇt[i]pōr was first pointed out by Dr. Wilson in his note on Moorcroft, *Travels*, ii. p. 244.

conspicuous ruins of this place attracted already the attention of the early European visitors. General Cunningham did not fail to recognize in them the remains of the two great temples of *Avantisvāmin* and *Avantīśvara* which Avantivarman had built here.[1] Of the two great ruins one is at Vāṇt[1]pōr itself, the other and larger one half a mile further down the river close to the hamlet of Jaubrāṛ (map 'Jabair.') Owing to the complete destruction of the central shrines it is impossible to ascertain now which was dedicated to Viṣṇu and which to Śiva. The fine enclosing quadrangles of the temples have also suffered badly. That of Avantisvāmin was used as a temporary fortification in Kalhaṇa's own time and underwent a severe siege.[2]

The site on which Avantivarman's town was built, had apparently enjoyed some sanctity before these temples were founded, and bore the old name *Viśvaikasāra*. The great extent of the town is indicated by the traces of ruined buildings which cover the foot of the hills east of Vāṇt[1]pōr for a considerable distance. The frequent references to Avantipura in the Chronicles show that the town retained some importance long after the death of its founder.

We hear but little of other old sites in Holaḍā. The great town of *Mihirapura* which King Mihirakula is said to have founded in it, can no longer be traced.[3] *Khuli*, a village situated a short distance to the south-west of Trāl, the modern headquarters of the district, may possibly be the *Khola* of the Chronicle, one of Gopāditya's Agrahāras.[4] Of *Trāl* I am unable to trace any old notice.

The identification of the village of *Būṭṣ*, about two miles south of Khuli, with the old BHAVACCHEDA is also uncertain.[5] It is based on a gloss of Rājānaka Ratnakaṇṭha, the writer of the Codex Archetypus of the Rājataraṅgiṇī. Still further south lies the village of *Kai*, probably the old KATIKA named by Kalhaṇa as a foundation of Tuñjina I.[6] This identification is made in the old gloss on the passage and supported by the phonetic evidence of the modern name.

Of old remains in Vular the interesting temple of *Nārastān* at the northern extremity of the district (34° 3′ lat. 75° 10′ long.) deserves notice.[7] Unfortunately I am unable to find any clue as to its old name

[1] See for a full description *J. A. S. B.*, 1848, pp. 275 *sqq.*; also *ib.*, 1866, 121 *sqq.*

[2] See *Rājat.* viii. 1429 *sq.*, 1474 *sqq.*

[3] See *Rājat.* i. 306.

[4] See *Rājat.* i. 340.

[5] Compare iii. 381 note.

[6] *Rājat.* ii. 14.

[7] See Mr. LAWRENCE's notice, *Valley*, p. 172. The attached photograph shows the site after my excavations. Regarding the result of the latter, see *Vienna Oriental Journal*, 1891, p. 345 *sqq.*

or history. Excavations made by me at the site in 1891 brought to light interesting sculptures, but no evidence as to its name. The large village *of Sutur* (map 'Sootoor') to the south-west of Nārastān may possibly account for the entry of *Satrava* in the Lokaprakāśa's list of Pargaṇas.

District of Dakṣiṇa-pāra.

107. The eastern boundary of Vular is marked by the high spur which descends from the north towards the confluence of the Vitastā and Gambhīrā. The adjoining district to the east is one of considerable extent. It comprises besides the whole right or western side of the Lidᵃr Valley also the low-lying tract between the Vitastā and the lower course of the Viśokā. The modern name of this great Pargaṇa is *Dachūnpōr* which appears in Śrīvara's Chronicle as DAKṢIṆAPĀRA. This clearly means 'the right bank' [of the Ledarī or Lidᵃr]. Another form, of the same significance, is *Dakṣiṇapārśva* found in the Lokaprakāśa and Mārtāṇḍamāhātmya. To this designation corresponds the term *Vāmapārśva*, now Khōvurpōr, which as we shall see, is applied to the left side of the Lidᵃr Valley.[1]

The junction of the Vitastā with the Gambhīrā, *i.e.*, the united Viśokā and Ramaṇyāṭavī, has already been mentioned above as a Tīrtha.[2] Not far from it lies the village of *Marhōm*, on the Vitastā, mentioned by Jonarāja under its old name of MAṆAVĀŚRAMA.[3] The first part of the name is identical with that of *Maḍavarājya*.

About two miles south-east of Marhōm and not far from the Vitastā, we find the village *Vāgᵍhōm*, with a sacred spring known by the name of HASTIKARṆA. This name seems to have applied formerly to the place itself which we find twice thus referred to by Kalhaṇa.[4] It is possibly the Hastikarṇa, where Bhoja, Harṣa's son, was treacherously murdered.

Temple of Cakradhara.

About one mile to the south of Hastikarṇa the Vitastā makes a great bend. The peninsula thus formed is occupied by a small *Uḍar* or alluvial plateau which owing to its height and isolated position is a very conspicuous object in the landscape. It was once the site of

1 General Cunningham, *Anc. Geogr.*, p. 94, assumes that Ks. *dachūn* 'right' is 'now used to denote the "north," and *kāwar*, (recte *khōvur*) or "left," to denote the "south."' This assumption, however, as well as the explanation given for the alleged change of meaning are based on some misunderstanding.

2 See § 64.

3 See *Jonar.* (Bo. ed.), 132.

4 See *Rājat.* v. 23 note; also vii. 1650. Another *Hastikarṇa*, mentioned by Śrīvara, i. 441, seems to have been near Śrīnagar on the west.

one of the oldest and most famous shrines of the Valley, the temple of Viṣṇu Cakradhara.

The plateau is still known as *Tsak°dar* Uḍar.[1] Brahman tradition is aware of the derivation of this name from *Cakradhara*. It was first brought to the notice of European scholars by Prof. Bühler who had duly recognized the antiquarian importance of the site.[2] The shrine of Cakradhara is often mentioned as a Tirtha of great sanctity.[3] It was also closely connected with the legends regarding the burned city of *Narapura*, localized as we shall see in its close vicinity. But the only detailed notice of the temple we owe to a historical incident which occurred there during the civil wars of Sussala's reign.[4]

The royal troops having been forced to evacuate the neighbouring town of Vijayeśvara or Vij°brōr, the inhabitants of the latter place and the neighbouring villages took refuge in the temple of Cakradhara. This, by its position on the high and steep Uḍar, was naturally well-adapted for defence. The temple filled by the crowd of fugitives and routed soldiers, was soon besieged by the rebel troops of Bhikṣācara. The temple courtyard was protected by massive wooden ramparts and gates. When these had been set on fire by the assailants a mighty conflagration ensued in which the whole mass of people inside perished. Kalhaṇa vividly describes this great catastrophe which he believes to have provoked divine vengeance and thus to have brought about the downfall of the pretender.

The account here given is of topographical interest. It shows that the temple actually stood on the flat top of the Uḍar, and also explains the scarcity of stone-remains in this locality. The absence of conspicuous ruins had already been noticed by Prof. Bühler. When visiting in 1895 the Tsak°dar Uḍar, I found only traces of a quadrangular enclosure, about forty yards square. They are marked by hollows at the northern end of the Uḍar which is separated from the rest by a dip in the ground. These hollows may possibly be the last indications of the wooden ramparts which enclosed the shrine.

The temple seems to have been subsequently restored, and Jonarāja mentions the statue of Cakradhara among those chief divine images which Sikandar Butshikast destroyed.[5] Jayadratha in his

[1] See *Rājat.* i. 38, 201 notes.

[2] See *Report*, p. 18.

[3] See *Rājat.* vii. 258, 261, 269; *Jonar.* (Bo. ed.), 763; *Śrīkaṇṭhac.* iii. 12; *Nīlamata*, 1170.

[4] See *Rājat.* viii. 971–995. The date of the burning of Cakradhara seems to have been the 12th Śrāvaṇa śudi, A.D. 1121.

[5] See *Jonar.* (Bo. ed.), 763.

Haracaritacintāmaṇi devotes a separate canto, vii., to the relation of the legend which localized the disc-wielding god at the Tīrtha of Cakradhara. The latter is still referred to in a general way in the old Vijayeśvaramāhātmya (No. 87, Poona MSS.). Now, however, Cakradhara is no longer visited by the pilgrims to Vijayeśvara though the Purohitas of the latter place still retain a recollection of the former sanctity of the site.

Legend of Narapura.

108. There can be no doubt that at the foot of the Cakradhara Uḍar there stood once an ancient town of considerable importance. From the low ground towards the river on the east and from the river-bed itself, ancient coins going back to Greek and Indo-Scythian rule are annually extracted in considerable quantities. Popular tradition still asserts that this site was once occupied by a great town. This tradition existed already in the time of Kalhaṇa who records it in the interesting legend of the burned city of Narapura.[1] This is told at great length in a poetic episode of the First Book.

King *Nara* is said to have founded a splendid capital, called after himself NARAPURA, on the sandy bank of the Vitastā close to the shrine of Cakradhara. "There in a grove was a pond of limpid water, the habitation of the Nāga Suśravas." A young Brahman who had found occasion to assist the Nāga and his two daughters when in distress, was allowed to marry in reward one of the latter. He lived in happiness at Narapura until the beauty of the Nāga lady excited the passion of the wicked king. When Nara found his advances rejected with scorn, he endeavoured to seize the beautiful Candralekhā by force. The couple fled for protection to their father's habitation.

The Nāga then rose in fury from his pool and "burned the king with his town in a rain of fearful thunderbolts." Thousands of people were burned before the image of Viṣṇu Cakradhara to which they had fled for protection. Ramaṇyā, the Nāga's sister, came down from the mountains carrying along masses of rocks and boulders. These she dropped, as we have seen, along the bed of the Ramaṇyāṭavī or Rembyār[2], when she found that Suśravas had already wreaked his vengeance. The Nāga himself feeling remorse at the carnage he had caused, removed to a lake on a far-off mountain. There "he is to the present day seen by the people on the pilgrimage to Amareśvara." "To this day," thus closes Kalhaṇa's narration, "that tale is remembered by the people when they behold close to Cakradhara that town destroyed by fire and that pond which has become a dry hollow."

[1] See *Rājat.* i. 201–274.

[2] Compare regarding the lake of the Nāga *Suśravas* on the route to Amburnāth, above, § 59.

Whatever the origin of the legend here told may have been, it is clear that popular tradition in Kalhaṇa's time looked upon the barren ground which stretches along the river between Tsak^{a}dar and the present Vij^{a}brōr as the site of an ancient city. The ruins which in the 12th century were pointed out as the remains of the burned Narapura, may have supplied the immediate starting point of the legend.

What these remains were we cannot say. As the ground referred to is subject to annual inundation it is possible that the remains meant have since disappeared under alluvial deposits. The habitation of the 'Suśram' Nāga was still shown to me in a hollow, generally dry, close to the south-east foot of the Uḍar. The name of Narapura and its king are no longer remembered. But the main features of the legend as heard by Kalhaṇa, still live in the local tradition.

Vijayeśvara.

109. The ancient town which once stood in the position indicated, was evidently succeeded by VIJAYEŚVARA, the present *Vij^{a}brōr*. The latter place, situated less than two miles above Cakradhara, received its name from the ancient shrine of Śiva *Vijayeśvara* (Vijayeśa, Vijayeśāna).[1] This deity is worshipped to the present day at Vij^{a}brōr. The site has evidently from early times been one of the most famous Tīrthas of Kaśmīr. It is mentioned as such in the Rājataraṅgiṇī and many old Kaśmīrian texts.[2] The tradition regarding Aśoka's connection with it supplies historical proof for its antiquity. According to Kalhaṇa's account which may well have been based on genuine local tradition or even inscriptional evidence, Aśoka had replaced the old stuccoed enclosure of the temple by one of stone. The great king was also credited with having erected within this enclosure two temples called *Aśokeśvara*.

This old temple which is often mentioned by Kalhaṇa and was the scene of many a historical incident, has now completely disappeared. According to the tradition of the local Purohitas it stood at a site close the river-bank and nearly opposite to the bridge over the Vitastā. When I first visited Vij^{a}brōr in 1889 I still found some ancient slabs and fragments at this spot. It was then some 15 feet below the level of the surrounding ground,[3] and has since been partly built over. Stone materials are said to have been removed from here for the new temple

[1] Compare for detailed references, *Rājat.* i. 38, 105 notes.

[2] The legend of the Tīrtha is given at length in the x. Prakāśa of the *Haracaritacintāmaṇi*.

[3] General Cunningham who saw these remains in 1847, rightly attributes them to the temple of Vijayeśa, but calls the place 'Vijayapāra.' He justly points to the difference of level as an indication of the antiquity of the structure; see *Anc. Geogr.*, p. 98.

of Vijayeśvara which was built by Mahārāja Raṇbīr Singh some thirty years ago higher up on the river-bank.

It is probable that a temple so much frequented had undergone more than one restoration in the course of the fifteen centuries which lie between the time of Aśoka and the end of Hindu reign in Kaśmīr. Some time before A.D. 1081, while King Ananta was residing at the Tīrtha of Vijayeśvara, the temple was burned down in a general conflagration, caused by his son Kalaśa. The latter, however, subsequently restored the shrine. The old Liṅga of Śiva Vijayeśvara seems to have fallen a victim to the iconoclasm of Sikandar Butshikast.[1]

The town of Vijayeśvara is ascribed by Kalhaṇa to King Vijaya.[2] But nothing else is recorded of this ruler, and this may cause a doubt as to his historical existence. It is significant that the town is designated either simply *Vijayeśvara* or as *Vijayakṣetra*, which is abbreviated from *Vijayeśvarakṣetra*. The modern name *Vijʸbrōr* is the Ks. equivalent of Vijayeśvara, *-brōr* (from Skr. *bhaṭṭāraka* 'god') having replaced the more specific *-īśvara*, the usual designation of Śiva.[3]

That the town had acquired importance at a comparatively early date, is indicated by the mention of a thousand Agrahāras said to have been granted here by King Mihirakula to a settlement of Gandhāra Brahmans.[4] It was large enough to accommodate the whole court and army of King Ananta when the latter removed his residence to Vijayeśvara.[5] The narrative of the civil wars which fills the last Book of Kalhaṇa's Chronicle shows the importance of the town by frequent references to the military operations of which it was the object.[6] One of these passages proves that there was a bridge over the Vitastā here already in the twelfth century, just as there is one still.

Vijʸbrōr has remained a town of some importance and still boasts of a considerable number of Brahmans, mostly Purohitas of the Tīrtha. The latter being conveniently situated on the pilgrims' way to Mārtāṇḍa

[1] See *Jonar.* (Bo. ed.), 762; for an earlier mention of this emblem see *ib.*, 127.

[2] *Rājat.* ii. 62.

[3] Compare *Rājat.* i. 38 note; also ii. 134. In the same way *Iśʸbrōr* represents *Iśeśvara*; with the feminine-*brāṛ* for *bhaṭṭārikā* we have *Sandʸbrāṛ* for *Saṁdhyādevī*, *Budʸbrāṛ* for *Bheḍādevī*, etc.

The forms 'Bijbiāra,' 'Bijbihara,' 'Bijbehara,' etc., under which the local name figures in European books, are all based on a faulty Panjābī pronunciation. A fanciful etymology of the name which sees in the first part of the word *vidyā* 'learning' and in the second '*Vihāra*,' has found favour in the guide-books and may be mentioned here for curiosity's sake.

[4] See *Rājat.* i. 317.

[5] See *Rājat.* vii. 336 *sqq.*

[6] *Rājat.* viii. 746 *sqq.*, 969 *sqq.*, 1140, 1509 *sqq.*, etc.

and Amaranātha is much frequented even at the present day. The Māhātmyas of Vijayeśvara do not fail to name a considerable number of minor Tīrthas to be visited along with the main site now marked by the new temple above referred to. But apart from *Cakradhara* and *Gambhīrasaṁgama* I am unable to trace any of these in the older texts.

Turning to that portion of the Dachūnpōr district which lies in the Lidᵃr Valley we have but few old localities to notice. The village of *Livᵃr*, some ten miles to the north-west of Vijayeśvara, is the LEVĀRA of the Rājataraṅgiṇī, mentioned as an Agrahāra established by King Lava.[1] *Kular*, about four miles higher up the Valley, is identified by an old gloss with KURUHĀRA, said to have been an Agrahāra of Lava's son Kuśa.[2]

Close to Pahᵃlgām where the Lidᵃr Valley divides into two branches, lies the hamlet of Māmal. A small temple of the usual Kaśmīr style built by the side of a fine spring is visited by the pilgrims to Amaranātha. It is designated in the Māhātmya called Amareśvara-kalpa as MAMMEŚVARA. It is in all probability identical with the shrine of this name mentioned in the Rājataraṅgiṇī.[3]

District of Vāmapārśva.

110. As we have already before noticed the several sacred sites of the Amaranātha pilgrimage, we may now turn back and descend to the left or eastern portion of the Lidᵃr Valley. It forms the modern Pargaṇa of *Khōvurpōr*. The latter name meaning 'left side' reproduces the earlier designation VĀMAPĀRŚVA, of the same significance, found in Jonarāja's Chronicle, the Lokaprakāśa and elsewhere.[4] In the upper portion of the Pargaṇa I am not able to identify any particular old locality, though ancient remains in the form of sculptures of some interest are found near several Nāgas of this tract, *e.g.*, at Lokutᵗpūr and Sāḷi (*Pāpaharaṇanāga*).

The large village of *Hutᵉmar* is undoubtedly an old site. Its modern name seems to identify it with the ŚĀKTAMAṬHA which Kṣemendra names as one of the stations in the peregrinations of his heroine Kaṅkālī. The chief mosque of the place is built with the remains of a Hindu temple and preserves in its walls some sculptured fragments of remarkable beauty.[5]

[1] See *Rājat.* i. 87.

[2] *Rājat.* i. 88.

[3] See viii. 3360.

[4] *Jonar.* (Bo. ed.) 79,1232.

[5] See *Samay.* ii. 43. The change of *Śākta* > *Hutᵉ* is in accordance with the phonetic laws of Kaśmirī; *mar* is the regular derivative of *maṭha*, see above, § 56. [When preparing my map, I had not noticed the local name of Kṣemendra's text; it is hence not shown on the map].

Shrine of Bhīmakeśava.

About one mile below Hut^{a}mar and on the bank of a branch of the Lid^{a}r, lies the hamlet of *Bum^{a}zu*, which contains an ancient structure of considerable historical interest. The Ziārat of Bāba Bām^{a}dīn Ṣāḥib is nothing but a well-preserved temple, converted, with a liberal use of plaster, into the supposed resting place of a Muhammadan saint. I have shown elsewhere that there is good reason to identify this shrine with the BHĪMAKEŚAVA temple which *Bhīma Sāhi*, king of Kābul, the maternal grandfather of Queen Diddā, is said to have erected during the rule of her husband Kṣemagupta (A.D. 950–958).[1]

The legendary of the Ziārat relates that the saint was originally a Hindu and bore before his conversion to Islām the name of *Bhīma Sādhī*. It is easy to recognize in this name an adaptation of Bhīma Sāhi. Also the name of the locality Bum^{a}zu which the Mārtāṇḍa-māhātmya renders by *Bhīmadvīpa*, is clearly derived from the old name of the shrine. *Bhīma* is an abbreviation of *Bhīmakeśava* to which Ks. *zu*, 'island,' has been added with reference to the several islands formed here by the Lid^{a}r immediately in front of the hamlet.

Kalhaṇa tells us a curious anecdote regarding the fate of Bhīma Sāhi's temple in King Harṣa's time who confiscated the great treasures, with which it was endowed.[2] Close to the present Ziārat of Bām^{a}dīn Ṣāḥib is a small cave in the cliff containing a well-preserved little temple which is still used for Hindu worship. Another smaller shrine outside has been turned into the tomb of Rīshī Ruknu-d-dīn Ṣāḥib.

Tīrtha of Mārtāṇḍa.

111. About one mile south of Bum^{a}zu we reach the Tīrtha sacred to *Mārtāṇḍa* which has from early times to the present day enjoyed a prominent position among the sacred sites of Kaśmīr. It is marked by a magnificent spring traditionally represented as two, *Vimala* and *Kamala*. An ancient legend connects them with the birth of the sun-god MĀRTĀṆḌA.[3] The Tīrtha is visited at frequent intervals by crowds of pilgrims and is well-known also in India proper.

The popular name of the Tīrtha, *Bavan*, is derived from Skr. *bhavana*, '[sacred] habitation.' This somewhat general appellation seems to have come into use already at an early date, as Śrīvara employs it,[4] and is in itself an indication of the great popularity of the Tīrtha. A

1 See *Rājat.* vi. 178 note. For an accurate description of the temple, see Bishop COWIE's paper, *J. A. S. B.*, 1866, pp. 100 *sq.*

2 See *Rājat.* vii. 1081 *sqq.*

3 Compare for a detailed account of the Tīrtha, *Rājat.* iv. 192 note. The Vimala Nāga is named by the *Nīlamata*, 963; *Śrīv.* i. 377, etc.

4 *Śrīv.* i. 376, 387.

more specific designation is *Mats°bavan*, Skr. '*Matsyabhavana*'; this owes its origin to the abundance of sacred fish which swarm in the large basins filled by the spring.[1]

The ancient remains at the sacred spring itself are very scanty. All the more imposing are the ruins of the great temple which King Lalitāditya erected at a short distance in honour of the presiding deity of the Tīrtha.[2]

They are situated a little over a mile to the south-east of 'Bavan,' near the northern edge of the Uḍar which stretches towards Anatnāg. It can scarcely be doubted that the site was chosen with a view to the prominent position it assured to the great temple. Kalhaṇa duly praises "the wonderful shrine of *Mārtāṇḍa* with its massive walls of stone, within a lofty enclosure." Its ruins though much injured by the ravages of time and earthquakes, form still the most impressive specimen of ancient Kaśmīr architecture. They have been much admired by European travellers and often described. They are the earliest ruins in Kaśmir the date of which is fixed with approximate accuracy.[3]

The name Mārtāṇḍa, in the form of *Mārtaṇḍ* or Maṭan, still attaches to the ruins though they have long ago ceased to be an object of religious interest. King Kalaśa had sought this great fane at the approach of death and expired at the feet of the sacred image (A.D. 1089). Harṣa, his son, respected this temple in the course of the ruthless confiscations to which he subjected the other rich shrines of the country. Subsequently in Kalhaṇa's time the great quadrangular courtyard of the temple with its lofty walls and colonnades was used as a fortification. The destruction of the sacred image is ascribed to Sikandar Butshikast.

Kalhaṇa distinctly mentions the town "swelling with grapes" which Lalitāditya founded near his temple; but of this no trace remains now. It is probable that at that time a canal supplied water from the Lid°r to the naturally arid plateau on which the temple stands. This canal seems to have been repaired by Zainu-l-'ābidīn whose irrigation works on the Mārtaṇḍ Uḍar are described at length by Jonarāja.[4] The

[1] Comp. *Āīn-i-Akb.*, ii. p. 358.

[2] See *Rājat.* iv. 192 and for details my note on the passage. For a description of the temple compare, *e.g.*, CUNNINGHAM, *J. A. S. B.*, 1848, pp. 258 *sqq.*; COLE, *Ancient Buildings*, pp. 19 *sqq.* FERGUSSON, *Ind. Architecture*, pp. 285 *sqq.*

[3] Lalitāditya's rule falls in the first half of the eighth century. Gen. Cunningham's assumption that the temple was built by the earlier King Raṇāditya, and only the enclosure by Lalitāditya, rests on a misinterpretation of the Rājatar. passages iv. 192 and iii. 462.

[4] See *Jonar.* 1245 *sqq.*

plateau has since become once more an arid waste though the course of the old canal can still be traced above Hutᵃmar.

The town of Mārtāṇḍa had left its name to the small Pargaṇa of Maṭan which comprised this plateau as well as the villages situated along the foot of the hills further east. It is referred to as *Mārtāṇḍadeśa* by Jonarāja.[1] Abū-l-Faẓl notices the large temple of *Maṭan* and the well or pit close by, which a Muhammadan legend represents as the place of captivity of the 'angels Hārūt and Mārūt.'[2]

Section VII.—Southern Districts of Maḍavarājya.

Anantanāga.

112. At the foot of the western extremity of the Mārtāṇḍa plateau lies the town of Islāmābād or by its Hindu name *Anatnāg*. The latter is derived from the great spring of the Anantanāga which issues at the southern end of the town. The Nāga, though no Tīrtha of particular repute, is mentioned in the Nīlamata, Haracaritacintāmaṇi and some Māhātmyas.[3] Of the town, however, I cannot find any old notice, and it is in all probability, as its Muhammadan name implies, a later foundation. To the north of the town and on the way to Bavan is the *Gautamanāga*, named by the Nīlamata and the Mārtāṇḍamāhātmya.

The modern name of the small district which comprised besides Anatnāg the tract immediately south and west of it, is *Anyech*. This is represented in some Māhātmyas of recent composition by *Anekākṣa*. This name occurs also once in Śrīvara's Chronicle, but the locality there meant is not certain.[4]

Tīrtha of Kapateśvara.

The valley of the Arᵃpath or *Harṣapathā* which opens to the east of Islāmābād, forms the Pargaṇa of *Kuṭᵒhār*. This name is in all probability connected with that of the ancient Tīrtha of Kapaṭeśvara, situated on the southern side of the valley close to the village of *Kōṭhēr*.[5] The name of the latter is undoubtedly a derivative of *Kapaṭeśvara*, as the analogy of Jyeṭhēr < Jyeṣṭheśvara, Triphar < Tripureśvara, etc., clearly shows.

[1] *Jonar.* 1310.

[2] See *Āin-i-Akb.*, ii. p. 358. For the Muhammadan story, see also Vigne i. p. 361.

[3] See *Nilamata*, 902; *Vitastā,-Trisaṁdhyāmāhātmya*, etc., also *Haracar.* x. 251 *sqq.* (Anantabhavana).

[4] *Śrīv.* iii. 184.

[5] See for a detailed account, *Rājat.* i. 32 note.

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The place of pilgrimage is the sacred spring of *Pāpasūdana* ('sin-removing'), situated a short distance above Kōṭhēr. In it S'iva is believed to have shown himself in the disguise (*kapaṭa*) of pieces of wood floating on the water. The legend is related at length in the Nīlamata, and the author of the Haracaritacintāmaṇī devotes to it a separate canto which has now become the official Māhātmya of the Tīrtha.[1] The importance of the latter is shown by the fact that Kalhaṇa mentions it in his Introduction first among the sacred sites of Kaśmīr.

Before him already Albērūnī had heard of the story that pieces of wood sent by Mahādeva appear annually "in a pond called *Kūdai-shahr* to the left of the source of the Vitastā, in the middle of the month of Vaiśākha."[2] *Kūdaishahr* (کودیشهر), is an easily explained corruption for کودیشور *i.e.*, **Kavadēśvar*, a prakritized form of the name. The map shows that the description of the position of the Tīrtha is accurate enough with reference to the Nīlanāga as the Vitastā's traditional source. The date named by Albērūnī is identical with that prescribed for the Kapaṭeśvara Yātrā.

The sacred spring rises in a large circular tank, enclosed by an ancient stone-wall with steps leading into the water. According to Kalhaṇa's account this enclosure was constructed about a century before his own time at the expense of the well-known King Bhoja of Mālava. The latter is said to have taken a vow to always wash his face in the water of the Pāpasūdana spring which he caused to be regularly supplied to him in jars of glass.[3] In my note on the passage I have shown that local tradition at Kōṭhēr still retains a recollection of this story though in a rather legendary form. A small temple which stands to the east of the tank, and some other remains probably belong to the period of Bhoja. Abū-l-Faẓl too knows, "in the village of Kōtihār, a deep spring surrounded by stone temples. When its water decreases an image of Mahādeva in sandal wood appears."

Śamāṅgāsā.

About four miles to the north-east of Kōṭhēr and on a branch of the Ār^{a}path river lies the populous village of *S'āngas*, the ancient S'AMĀṄGĀSĀ.[4] The modern name can be traced back to S'amāṅgāsā through a course of regular phonetic conversion, one stage of which is preserved in the form *S'vāngas* supplied by the old glossator of the Chronicle.[5] Some old

1 *Haracar.* xiv.
2 See *India*, ii. p. 181.
3 See *Rājat.* vii. 190 *sqq.*
4 See *Rājat.* i. 100; viii. 651.
5 Compare *Rājat.* i. 100 note and the analogy of *S'anāra* > *S'ār*.

carved slabs built into the chief Ziārat of the place attest its antiquity. A short distance above Sāngas we come to another old place. It is the present village of *Vut°rus* which on the authority of the same glossator and the name itself we can safely identify with Kalhaṇa's *Utrāsa*.[1] Uccala and Sussala in their flight from Harṣa's court found a temporary refuge with the Ḍāmara who resided there.

Turning back to the west we find in the middle of the valley the village of *Khondur*. An old gloss enables us to identify it with the ancient SKANDAPURA mentioned by Kalhaṇa as an Agrahāra of King Gopāditya.[2] More important is *Ach°bal*, a large village at the west foot of the ridge which lines the Kuṭ°hār Pargaṇa from the south. It is mentioned in the Chronicle under the name of AKṢAVĀLA. The beautiful springs of the place have often been described since Abū-l-Faẓl's time, also by Bernier.[3] The park around them was a favourite camping ground of the Mughal court. The Nīlamata calls the spring *Akṣipālanāga*.

Pargaṇa of Bring.

113. The Kuṭ°hār Pargaṇa is adjoined on the south by the district of Bring which coincides with the valley of the Bring stream. Its old name cannot be traced; the Lokaprakāśa transcribes the modern designation by *Bhṛṅga*.

At the western end of the Pargaṇa and about 5 miles to the south-west of Ach°bal is the village of *Lōk°bavan* which an old gloss identifies with the LOKAPUṆYA of the Rājataraṅgiṇī.[4] The numerous passages which mention the place agree with this location. The name Lōk°bavan applies also to the fine Nāga adjoining the village, and this explains the second part of the present name *-bavan* (Skr. *bhavana*).[5] King Lalitāditya is said to have built a town here. A small garden-palace erected in Mughal times near the spring is partly constructed of old materials.

Ascending the Bring valley we come again to an old site at the large village of *Biḍ°r*. It is certainly the BHEḌARA of Kalhaṇa who notices here a wealthy Agrahāra of King Bālāditya.[6] A ruined mound in the village and some old sculptures at the neighbouring Brahman village of Hāngalgūnd are the only ancient remains now above ground.

[1] Compare vii. 1254.

[2] See *Rājat.* i. 340.

[3] Compare *Rājat.* i. 338. In the translation of the *Ain-i-Akb.* the name appears as 'Acch Dal', ii. p. 358; see BERNIER, *Travels*, p. 413.

[4] See *Rājat.* iv. 193 note.

[5] See above, § 111.

[6] *Rājat.* iii. 481.

Tīrtha of Ardhanārīśvara.

From Biḍ[a]r we may pay a passing visit to a small Tīrtha which though I cannot find it mentioned in any old text, may yet claim some antiquity. About 1½ miles to the south-east of Biḍ[a]r lies the village of Nāṛu in the low hills flanking the valley. It contains a small temple of ancient date which was restored forty years ago by a pious Dogrā official. It stands by the side of a small Nāga at which, according to the local Māhātmya I acquired from the resident Purohita, Śiva is worshipped as ARDHANĀRĪŚVARA, that is, in conjunction with his consort Pārvatī. Inside the temple is an ancient image of Viṣṇu with a short Sanskrit inscription said to have been found in a miraculous way at the restoration of the temple. About half a mile to the south-west is a sacred spring known as *Svedanāga* which seems to have risen originally within a large temple. The remains of the latter lie in shapeless heaps around the spring. The latter is still visited by pilgrims.

It appears to me likely that it is this spot which Abū-l-Faẓl wishes to describe in the following notice. After mentioning the Kuk[a]r Nāg and Sund[a]brāṛ (see below) among the sacred places of Bring, he says: "At a little distance in the midst of a beautiful temple, seven fountains excite the wonderment of the beholder. In the summer-time self-immolating ascetics here heap up a large fire around themselves and with the utmost fortitude suffer themselves to be burned to death."[1] He then mentions a lofty hill containing an iron mine to the north of this spot. This can only be the hill above *Sōp*, on the northern side of the Valley and nearly opposite Nāṛu, from which iron is still extracted at the present time. There is no other Nāga within Bring to which Abū-l-Faẓl's description would apply so closely as to the Svedanāga.

The *Kuk[a]r Nāg*, mentioned by Abū-l-Faẓl for its good water inciting a healthy appetite, lies about a mile above Biḍ[a]r. It is a spring of very great volume, referred to in the Trisaṁdhyāmāhātmya as Kukkuṭeśvara.

Tīrtha of Trisaṁdhyā.

Bring contains one of the holiest of Kaśmīr Tīrthas in the sacred spring of the goddess SAṀDHYĀ, also called *Trisaṁdhyā*, the modern *Sund[a]brāṛ*.[2] It is situated in a side valley opening to the south of the village of Devalgōm, circ. 75° 22′ long. 33° 32′ lat. The spring of Saṁdhyā derives its fame as well as its appellation from the fact that during uncertain periods in the early summer it flows, or is supposed to flow, intermittently, three times in the day and three times in the night. Owing to the analogy thus presented to the three-fold recitation of the Gāyatri

[1] See *Āīn-i-Akb.*, ii. p. 356.

[2] See *Rājat.* i. 33 note.

(Saṁdhyā), it is held sacred to the goddess Saṁdhyā. At the season indicated it is visited by a considerable concourse of people.

The small spring, which is usually dry for the greater part of the year, has owing to the curious phenomenon above indicated always enjoyed great fame as one of the 'wonders' of the valley. Kalhaṇa duly mentions it immediately after Kapaṭeśvara. The Nīlamata too knows it. Abū-l-Faẓl describes it in detail, and Dr. Bernier made it a special point to visit this 'merveille de Cachemire.'[1] He has observed the phenomenon with his usual accuracy. The ingenious explanation he has recorded of it, shows how closely he had examined the topographical features of the little valley.

Close to the Trisaṁdhyā spring there is another Nāga, sacred to the Seven Ṛṣis, but not sharing the former's peculiar nature. There are no ancient remains in the neighbourhood deserving special notice.

Nīlanāga.

114. To the south of Bring lies the valley of the Sāndrān River which forms the Pargaṇa of Shāhābād. This name is of comparatively modern origin, as Abū-l-Faẓl still knows the tract as *Vēr*.[2] This designation still survives in the designation Vērnāg, *i.e.*, 'the Nāga of Vēr,' popularly given to the fine spring which we have already noticed as the habitation of the NĪLANĀGA and the traditional source of the Vitastā. Abū-l-Faẓl saw still to the east of it 'temples of stone.' These have now disappeared, their materials having been used probably for the construction of the fine stone-enclosure which Jahāngīr built round the spring. The deep blue colour of the water which collects in the spring-basin, may possibly account for the location of the Nīlanāga in this particular fountain. Kalhaṇa's reference to the "circular pond" from which the Vitastā rises, shows that the spring had also in ancient times an artificial enclosure similar to the present one.[3]

Vitastātra.

Reference has already been made to the sacred spring of *Vithavutur* only about one mile to the north-west of Vērnāg. The small village near by is mentioned by Kalhaṇa as a town under the name of VITASTĀTRA.[4] Aśoka is said to have erected there numerous Stūpas. Within the *Dharmāraṇya* Vihāra there stood a lofty Caitya built by him, but of these structures no remains can now be traced above ground. *Vitastātra* could never have been a large town as the ground is too confined. But some importance is assured to the site by the Bān[a]hāl route which leads past

1 Compare *Āīn-i-Akb.*, ii. pp. 355 *sq.*; BERNIER, *Travels*, pp. 410 *sqq.*

2 See *Āīn-i-Akb.*, ii. pp. 361, 370.

3 See *Rājat.* i. 28.

4 See *Rājat.* i. 102 note.

it. This pass and its ancient name *Bāṇaśālā* we have already spoken of.[1]

Of other old localities PAÑCAHASTĀ, the present *Pānzath*, has already been referred to as the site of one of the traditional sources of the Vitastā. Kalhaṇa mentions it in connection with a Maṭha which Śūravarman, Avantivarman's minister, built here.[2] A pretty valley which opens to the south of Pānzath, is now known by the name of its chief village *Ruzul*. The latter is mentioned by Jonarāja as RĀJOLAKA.[3] About three miles higher up this valley is the Nāga of VĀSUKI. It is mentioned in the Nīlamata and other old texts, but does not appear to have ever been an important Tīrtha.[4]

District of Devasarasa.

115. The Pargaṇa of *Divasar* which adjoins Shāhābād-Vēr on the west, may be roughly described as comprising the tract of alluvial plain drained by the Veśau (Viśokā). By its ancient name of DEVASARASA it is often mentioned in the Rājataraṅgiṇī and other Chronicles.[5] Being extensively irrigated by canals drawn from the Viśokā it is very fertile. This accounts for the great part which the Ḍāmaras or feudal landholders of Devasarasa played during the weak reigns of the latter kings. No certain reference to a specific locality within this tract can be traced in our old texts. But it seems probable that *Pārevišoka*, repeatedly named in Kalhaṇa's Chronicle, must be looked for within Devasarasa; the name means literally 'beyond the Viśokā.'[6]

The fertile valleys descending to the right bank of the Viśokā from that portion of the Pīr Pantsāl Range which lies between the Kōnsar Nāg Peak and the Mohi Pass, form a small district of their own, known in recent times by the double name *Khur-Nārāvāv*. The first part of this name is taken from the large village of Khur situated about two miles from the Viśokā, circ. 74° 56′ 45″ long. 33° 37′ lat. It is marked as 'Koori' on the larger Survey map. The name KHERĪ which we find used by Kalhaṇa and Śrīvara for the designation of the tract, is in all probability the older form of Khur.[7] It seems that in later Hindu times the administration of Kherī, perhaps as a royal allodial domain, formed a special charge. Kalhaṇa often refers to the *Kherīkārya* as a high state-office. The Sikhs and Dogrās who established Jāgīrs for members

1 Compare above, § 41.
2 See *Rājat.* v. 24.
3 See *Jonar.* (Bo. ed.), 90.
4 See *Nīlamata*, 901.
5 Compare *Rājat.* viii. 504 note.
6 Compare *Rājat.* iv. 5 note.
7 Compare regarding the identification of *Kherī*, *Rājat.* i. 335 note.

of the reigning family in Khur-Nār^{a}vāv, may thus have followed an earlier arrangement.

Godharā-Hastiśālā.

The only localities in this little district that are known to us by their old names, are GODHARĀ and HASTIŚĀLĀ, the present *Gudar* and *Aṣt^{i}hēl*.[1] These two villages are situated close together, on a branch of the Viśokā near the eastern limits of Khur-Nār^{a}vāv. Kalhaṇa mentions the 'Agrahāra of Godharā-Hastiśālā' as a foundation of King Godhara. The old gloss which transcribes these local names by *Godhar-Astīhil* enabled me to identify the places intended.

A small stream which falls into the Viśokā at Gudar is known by the name of Godāvarī and forms a Tīrtha of some repute among the Brahmans of the neighbouring districts. In the Māhātmya of the Tīrtha the site of the village is called *Godara*, and its name connected with the legend of the appearance of the *Godāvarī*. The local tradition heard by me on the spot tells of a town which King Gudar is supposed to have founded here. It is possible that the name of King Godhara, which we know Kalhaṇa took indirectly from Helārāja's 'List of Kings,' rests on no better foundation than this long-surviving local tradition.[2] There are no ancient remains traceable above ground at Gudar, and the locality is far too confined for a larger settlement.

The Naubandhana Tīrtha and the Kramasaras or Kōns^{a}r Nāg south of this district have already been previously noticed.

District of Karāla (Ardhavana).

116. To the north of Div^{a}sar lies the considerable district of Āḍ^{a}vin extending from the western end of Khur-Nār^{a}vāv to the lower course of the Viśokā. Its present name is derived from that of the large village of *Āḍ^{a}vin*, which lies on the left bank of the Viśokā, about three miles south-west of Vij^{a}brōr. In the form of *Ardhavana* this name is found already in a passage of Jonarāja's Chronicle, supplied by the new edition.[3] The ancient designation of the district, however, was KARĀLA. This is used by Kalhaṇa when speaking of the *Suvarṇamaṇikulyā*, the present Sun^{a}mān[4] Kul, which has already been referred to as irrigating part of Ād^{a}vin.[4]

In the lower portion of the district and on the left bank of the Viśokā, we have the ancient *Katīmuṣa*, the present village of *Kaimuh*.

1 For details compare *Rājat.* i. 96 note.

2 Regarding the unhistorical character of the royal names which Kalhaṇa inserted on Helārāja's authority, see *Rājat.* i. 86 note. They seem to be all of an eponymic character.

3 See *Jonar.* (Bo. ed.) 1330.

4 See *Rājat.* i. 97 note, and above, § 78.

The place is mentioned by Kalhaṇa as an Agrahāra founded by Tuñjīna I., and contains some old remains built into its chief Ziārat.[1]

Part of Āḍ³vin lies on an alluvial plateau. The northernmost portion of this Uḍar seems to have been formed into a separate Pargaṇa after Zainu-l-'ābidīn had constructed there extensive irrigation channels. From the small town of *Jainapurī* founded by him the new subdivision took the name of Zain³pōr or JAINAPURA.[2] At the east foot of the Zain³pōr Uḍar lies the village of *Vaṣch*[i] (map 'Woochi') which on the authority of an old gloss may be identified with VAŚCIKĀ (or Vaścika), an Agrahāra founded by Gopāditya.[3]

The Pargaṇa which joins on to Āḍ³vin in the north-east, is now known as *Bōṭ* (map 'Batoo'). Its ancient name is unknown. The only old locality I can trace in it is the village of *Sidau*, 74° 51′ long. 33° 41′ lat., the ancient SIDDHAPATHA.[4] It has given its name to the route previously mentioned which leads to the Būdil and Kōns³r Nāg Passes.

It is curious that we find no old mention whatever of *Supiyan*, a considerable town, which is now the trade emporium for the Pīr Pantṣāl route. In this character Supiyan has replaced the ancient Śūrapura or Hür³pōr, but the change must be a comparatively recent one.

Śūrapura.

ŚŪRAPURA which we have already noticed as the Kaśmīr terminus of the Pīr Pantṣāl route, lies some seven miles higher up on the Rembyār³.[5] It received its name from the minister Śūravarman who built it in the time of Avantivarman and transferred to it the watch-station or 'Draṅga' of the route. The position of the latter is marked by a spot known as Ilāhī Darwāza, a short distance above Hür³pōr.[6] Śūrapura must have been a place of considerable extent as ruins of old habitations can be traced on the river banks for over two miles below the present Hür³pōr. It evidently retained its importance down to Akbar's time. For it is regularly mentioned by all the later Chronicles in connection with marches and traffic by the Pīr Pantṣāl route. The ancient remains of the place have been described by me in my notes on the latter.[7]

Our previous account of the old localities on the way to the Pīr

1 Compare *Rājat.* ii. 55 note.

2 See *Jonar.* (Bo. ed.) 1144 *sq.*; *Śrīv.* iii. 194; Fourth Chron. 360, 383.

3 Compare *Rājat.* i. 343 note.

4 See *Rājat.* viii. 557.

5 Regarding Śūrapura and its old sites, compare Rājat. Note *D* (iii. 227); v. 39 note; also *J. A. S. B.*, 1895, pp. 381 *sqq.*

6 See above, § 42.

7 See *J. A. S. B.*, 1895, p. 385.

Pantsāl Pass makes it unnecessary for us to proceed now further in this direction. Descending, then, by the Rembyār[a] we come on its left bank to the village of *Dēgām* situated about one and a half miles to the west of S'upiyan. It is the DEGRĀMA of the Rājataraṅgiṇī and the site of the *Kapālamocana* Tīrtha.[1] At the spring of the latter Śiva is supposed to have cleaned himself from the sin attaching to him after the cutting-off of Brahman's head (*kapāla*). The Tīrtha is old, because the Haracaritacintāmaṇi mentions it twice.[2] There are but few ancient remains at the sacred site, and the extant Māhātmya is evidently not of old date. It calls the village by the name of *Dvigrāma* and knows the modern S'upiyan by the name of *Śūrpāyaṇa*.

117. The villages which lie at the foot of the pine-clad spurs descending into the valley west and north-west of S'upiyan, formed until recent times a small distinct Pargaṇa known as *Śūparsāmūn*. Abū-l-Faẓl mentions it (Sōparsāman), but I am not able to trace it in our older texts.

To the north of this tract and of Bōṭ extends the Pargaṇa of *Śukru*.

Kalyāṇapura.

Its old name is unknown. Here at the foot of the hills, we have the ancient KALYĀṆAPURA, represented by the present village of *Kalampōr*, situated 74° 54′ long. 33° 48′ lat. It was founded by Kalyāṇadevī, a queen of Jayāpīḍa.[3] Being on the high road from the Pīr Pantsāl Pass to S'rīnagar, it was repeatedly the scene of battles fought with invaders from that direction.[4]

At Kalyāṇapura there was in Kalhaṇa's time the splendid country-seat of a powerful Ḍāmara.[5] The large village of *Drāb[a]gām*, some three miles north of Kalampōr, is mentioned as DRĀBHAGRĀMA by S'rīvara, along with Kalyāṇapura, in the description of a battle which was fought between the two places.[6]

High up in the valley of the Birnai stream which debouches at Drāb[a]gām from the south-west, is the site of an ancient Tīrtha which though now completely forgotten must have ranked once amongst the most popular in Kaśmīr. In Kalhaṇa's introduction there is named, along with Trisaṁdhyā, Svayaṁbhū, S'āradā and other famous sites, "the hill of Bheḍa (*Bheḍagiri*) sanctified by the Gangodbheda spring." There the goddess Sarasvatī

Tīrtha of Bheḍā.

1 Compare *Rājat.* vii. 266.

2 See *Haracar.* x. 249; xiv. 111.

3 See *Rājat.* iv. 483 note.

4 See *Rājat.* viii. 1261 *sqq.*; *S'rīv.* iv. 466 *sqq.*

5 See *Rājat.* viii. 2348 *sqq.*

6 See *S'rīv.* iv. 467. For a miniature temple extant at Drāb[a]gām, compare Bishop Cowie's note, *J. A. S. B.*, 1866, p. 117.

was believed to have shown herself as a swan in a lake situated on the summit of the hill. This Tirtha has long ago ceased to be visited by pilgrims, and all recollection regarding its position has been lost to Paṇḍit tradition. Fortunately the old Māhātmya of the sacred lake has survived in a single copy. With the help of some indications furnished by it and an opportune notice of Abū-l-Faẓl, I was able to make a search for this ancient Tirtha which ultimately led to its discovery at the present Buḍ^{a}brāṛ in the valley above indicated.

For the detailed evidence regarding this identification I must refer to my note on Kalhaṇa's passage.[1] Here a brief reference to the topographical peculiarity of the site will suffice. The Māhātmya describes the lake sacred to the goddess Sarasvatī-*Bheḍā* as situated on the summit of a hill, and *Gaṅgodbheda* as a spring flowing from it. At *Buḍ^{a}brāṛ*, a small Gujar hamlet, which occupies the position marked by BHEḌAGIRI on the map, I found an ancient stone-lined tank fed by a spring on the top of a small hillock. The latter rises about seventy feet above the level of the narrow valley in which it is situated. From the side of the hillock issues a spring which is the natural outflow of the tank and exactly corresponds to the description given of Gaṅgodbheda. The name *Buḍ^{a}brāṛ* is the direct derivative of *Bheḍādevī*, 'the goddess Bheḍā,' the popular designation of the Tīrtha found in the Māhātmya; *-brāṛ* < Skr. *bhaṭṭārikā* is the equivalent of *devī* as in Sund^{a}brāṛ, Har^{a}brāṛ and other names.

The water of the spring which fills the tank, is said to keep warm in the winter. This accounts evidently for the story told in the Māhātmya that snow never lies on the ground around the sacred tank. Also Abū-l-Faẓl's notice of the Tīrtha mentions this particular feature: "Near Shukroh (Śukru) is a low hill on the summit of which is a fountain which flows throughout the year and is a place of pilgrimage for the devout. The snow does not fall on this spur."[2]

Also Śrīvara helped to guide my search in the direction of Buḍ^{a}brāṛ and to confirm the subsequent identification. He mentions the route through *Bheḍāvana*, 'the forest of Bheḍā,' as the line of retreat taken by the troops who after their defeat in the above-mentioned engagement near Drāb^{a}gām were fleeing towards Rajaurī.[3] A glance at the map shows that the thickly wooded valley of Buḍ^{a}brāṛ is meant here. For a force beaten near Drāb^{a}gām it affords the most direct and safest retreat to the Pīr Pantsāl Pass and hence to Rajaurī. The route leading through the valley joins the 'Imperial Road' at Dubjī and is shown on the map.

1 See *Rājat.* i. 35, Note *A*.

2 See *Āīn-i-Akb.*, ii. p. 362.

3 Compare *Śrīv.* iv. 496 and the preceding narrative.

Returning once more to the plain we have yet to notice two other old localities of S'ukru. *Bilau* (map 'Belloh') about four miles north-east of Drāb^{a}gām is probably the 'village of BILĀVA' once mentioned by Kalhaṇa.[1] Within a mile of it lies the village *Sun^{a}sāmil* which we may safely identify with the SUVARṆASĀNŪRA of the Rājataraṅgiṇī, in view of the resemblance of the names and the repeated mention of the latter place together with Kalyāṇapura.[2]

Districts of Śāvur and Chrāṭh.

118. East of S'ukru towards the Vitastā stretches the Pargaṇa of *Śāvur* (map 'Showra'). The earlier form of its name cannot be traced. Its northern part is formed by the alluvial plateau known as the *Naunagar Uḍar*. This latter is twice referred to as NAUNAGARA in Kalhaṇa's Chronicle.[3] The village of *Pāyer* which lies at the foot of the Uḍar at its north-western end contains a well-preserved little temple often described by European travellers.[4] Nothing is known regarding the original name of the locality.

To the north of S'ukru we have the district of *Chrāṭh* (shown by name on the larger survey map). It extends from the hills above Rāmuh in a north-easterly direction to the left bank of the Vitastā. Its old name is restored in Paṇḍit Sāhibrām's Tīrthasaṁgraha as **Srīrāṣṭra*, but I do not know on what authority. *Rāmuh*, first correctly identified by Prof. Bühler with Kalhaṇa's RĀMUṢA,[5] is a considerable village on the high road from S'upiyan to S'rīnagar. It is first mentioned as an Agrahāra, founded by a queen of Tuñjīna I. A small spring at the northern end of the village, called *Dhananāga*, is visited as a Tīrtha and contains some fragments of ancient sculptures. The temple erected by the Brahman family of the Dars which now holds Rāmuh as a Jāgīr, does not seem to mark an old site.

A short distance to the north of Rāmuh rises an alluvial plateau which is crossed by the road to S'rīnagar. It is known as *Gūs Uḍar*, from the village of *Gūs* situated at its eastern foot, about two miles from Rāmuh. The place is mentioned as GUSIKĀ in S'rīvara's

[1] See *Rājat.* vii. 1016.

[2] See *Rājat.* vii. 1519 note; *sun*^{a} 'gold' is the regular Kś. derivative of Skr. *suvarṇa*.

[3] See *Rājat.* vii. 358.

[4] Compare, *e.g.*, CUNNINGHAM, *J. A. S. B.*, 1848, pp. 254 *sqq.* I am unable to explain why the place figures in all European accounts as Pāyech, Pā Yech, etc. VIGNE, ii. 41, first uses this form which is locally quite unknown, and does not fail to explain it by one of his naïve etymologies.

[5] *Rājat.* ii. 55; *Report*, p. 7. Medial *ṣ* becomes in Kś. regularly *h*; comp. *Katimuṣa* > *Kaimuh*, *Khonamuṣa* > *Khun^{a}moh*, etc.

Chronicle which also knows the plateau by the name *Gusikoḍḍāra*.[1] At the other end of Chrāṭh towards the Vitastā lies the large village of *Ratanpōr*, 75° 1′ long. 33° 55′ lat., which in all probability represents the RATNĀPURA of the Rājataraṅgiṇī.[2] The latter was founded in Kalhaṇa's time by Queen Ratnādevī who also constructed there a fine Maṭha.

With Chrāṭh may be mentioned two localities on the left bank of the Vitastā though in recent times they were counted with the riveraine Pargaṇa of Sāiru-l-Mawāẓi' Bālā. *Gūr'pūr*, a small village opposite to the foot of Mount Vast'rvan, is identified by an old gloss with GOPĀLAPURA which, according to Kalhaṇa, was founded by Queen Sugandhā (A.D. 904-6).[3]

Lower down on the river is the large village Kāk'pōr which forms as it were the riverside station or port for S'upiyan. A note from the hand of Paṇḍit Rājānaka Ratnakaṇṭha who wrote about the middle of the 17th century the Codex Archetypus of the Rājataraṅgiṇī, identifies UTPALAPURA with Kāk'pōr.[4] Utpalapura was founded by Utpala, an uncle of King Cippaṭa-Jayāpīḍa, in the early part of the 9th century. If this identification is correct, one of the ruined temples extant at Kāk'pōr and noticed already by Gen. Cunningham, may be the shrine of Viṣṇu *Utpalasvāmin* mentioned by Kalhaṇa in connection with the foundation of Utpalapura. Jonarāja also knows the latter place and records a late restoration of its Viṣṇu temple.[5]

Districts of Nāgām and Yech.

119. North of Chrāṭh we come to the district of Nāgām which is one of considerable extent. Its old name NĀGRĀMA is often mentioned in the later Chronicles.[6] The only old locality which I can trace in it, is the village of *Ār'gōm*, situated 74° 45′ long. 33° 56′ lat. It is the HĀḌIGRĀMA of Kalhaṇa, mentioned as an Agrahāra of Gopāditya and as the scene of several fights in the Chronicler's own time.[7]

[1] *Śrīv.* iv. 532, 465, 592 *sqq.*; *-uḍḍāra* is the Skr. original of the Ks. term *uḍar*, see *Rājat.* note viii. 1427.

[2] See *Rājat.* viii. 2434.

[3] See *Rājat.* v. 244 note.

[4] See *Rājat.* iv. 695 note. The learned copyist's note is in a copy of the *Kṣetrapālapaddhati* seen by me in 1895 in the possession of a Kaśmīr Brahman resident at Lahore.

[5] See *Jonar.* (Bo. ed.) 111 *sqq.*, 369, 1142.

[6] Compare *Jonar.* (Bo. ed.) 661; *Śrīv.* ii. 10; iii. 24, 430; iv. 349; Fourth Chron. 258, etc.

[7] See *Rājat.* i. 340 note. The old glossator on this passage renders Hāḍigrāma correctly by *Āḍegrām*.

Some remains of old buildings are reported to exist at this place; I have not seen it myself.

About five miles due south of Ār[1]gōm we find a small lake known as Nil[a]nāg, situated in a valley between low spurs descending from the Pīr Pantsāl Range. It appears to have been formed by an old landslip which blocked a narrow defile in the Valley. This lake does not appear ever to have enjoyed any particular sanctity. But Abū-l-Faẓl by some curious misapprehension transfers to it the legends of the famous Nīlanāga (at Vērnāg). He adds to them what appears like a garbled version of the story of the city submerged in the Mahāpadma or Volur lake.[1]

Nāgām is adjoined on the north by the Pargaṇa of *Yech* which extends to the immediate vicinity of Srīnagar. Its old name is given as Ikṣikā by Srīvara.[2] In the centre of the tract lies an arid alluvial plateau known as *Dām[a]dar Uḍar*, where an ancient popular tradition surviving to the present day has localized the legend of King *Dāmodara*.

Dāmodara's Uḍar.

The story as related by Kalhaṇa, represents the king as having built a town on the Uḍar which latter was called after him Dāmodarasūda.[3] In order to bring water to it he had a great dam, called Guddasetu, constructed by supernatural agency. Once hungry Brahmans asked the king for food, just as he was going to bathe. The king refused to comply with their request until he had taken his bath. The Brahmans thereupon cursed him so that he became a snake. Ever since the unfortunate king is seen by people in the form of a snake "rushing about in search of water far and wide on the Dāmodara-Sūda." He is not to be delivered from the curse until he hears the *whole* Rāmāyaṇa recited to him in a single day, a task which renders his release hopeless.

The modern name Dām[a]dar Uḍar is the exact equivalent of Kalhaṇa's *Dāmodara-Sūda*, the old Skr. term *sūda* meaning a 'place where the soil is barren.' The local name *Guddasetu* still lives in that of the small village *Guḍ[a]suth* situated at the south foot of the Uḍar. Just at this point the latter shows its greatest relative elevation and falls off towards the valley with a steep bank over one hundred feet high. The wall-like appearance of this bank probably suggested the story of an embankment which was to bring water to the plateau. In view of the configuration of the ground no serious attempt at irrigation by means of an aqueduct could ever have been made in this locality.

1 Compare *Ain-i-Akb.*, ii. p. 363. It is possible that of the two Nīlanāgas which the Nīlamata, 903, mentions besides the famous spring of that name, one was located in the Nāgām lake.

2 *Srīv.* iii. 25.

3 Compare for detailed references, *Rājat.* i. 156 note.

The Uḍar stretches in a north-westerly direction, for about six miles from the village of Vah^{a}tōr, with a breadth varying from two to three miles. It bears only scanty crops of Indian corn in patches. Being entirely devoid of water, it is a dry and barren waste, a haunt of jackals as in the days when King Kṣemagupta hunted over the '*Dāmodarāraṇya*.'[1] The main features of the legend regarding it are well known to popular tradition throughout Kaśmīr. The inhabitants of the neighbouring villages also point to a spot on the Uḍar known as *Sat^{a}rās Tēng*, as the site of Dāmodara's palace. A spring called *Dāmodar-Nāg* in the village of Lālgām, is believed to have served for the king's ablutions.

To Yech belongs also the small village of *Somar^{a}bug* on the left bank of the Vitastā which according to the note of the old glossator A_3 marks the site of the temple of Viṣṇu SAMARASVĀMIN mentioned by Kalhaṇa.[2] Another old locality in Yech is probably marked by the hamlet of *Hal^{a}thal* to which Abū-l-Faẓl refers. It is not shown on the Survey map, and I have not been able to ascertain its exact position. Hal^{a}thal is evidently a derivative of ŚĀLĀSTHALA, the name given by Kalhaṇa to a locality where a fight took place in the time of King Ananta.[3] Abū-l-Faẓl mentions 'Halthal' for its quivering tree. "If the smallest branch of it be shaken, the whole tree becomes tremulous."

SECTION VIII.—SOUTHERN DISTRICTS OF KRAMARĀJYA.

Districts of Dūnṯs, Bīru, Māñch^{a}hōm.

120.—To the west of Yech and reaching close up to the capital, lies the Pargaṇa now called *Dūnṯs* (map 'Doonsoo'). Its ancient name is uncertain; possibly it is intended by the name *Dvāviṁśati* in the Lokaprakāśa's list of 'Viṣayas.' In Abū-l-Faẓl's table of Pargaṇas Dūnṯs ('Dūnsū') is already counted with Kamrāz. An old locality in it is *Śīl^{i}pōr*, a large village situated circ. 74° 45′ long. 34° 1′ lat. (map 'Shalipoor'). We may safely recognize in it the SELYAPURA of the Rājataraṅgiṇī which is referred to as a place on the direct route from the Tōṣ^{a}maidān Pass and the Kārkotadraṇga to Śrīnagar.[4]

Hukh^{a}lit^{a}r (map 'Haklitri') can safely be identified, in view of the name and the evidence of an old gloss, with ŚUSKALETRA mentioned in the

[1] Compare *Rājat.* vi. 183.

[2] See note v. 25.—The ending *-bug* is not rare in Kaśmīr village names. According to Paṇḍit tradition, it is derived from Skr. *bhoga* in the sense of 'property granted for the usufruct [of a temple].'

[3] See note vii. 159; *Āīn-i-Akb.*, ii. p. 363.

[4] See *Rājat.* vii. 494 note; viii. 200.

Rājataraṅgiṇī as a place where Stūpas were erected by King Aśoka.[1] I have not visited the village myself and am hence unable to say whether there are any remains in the vicinity which could be attributed to Stūpas. Kalhaṇa locates at Suṣkaletra the fierce battle in which King Jayāpīḍa recovered his kingdom.

West of Dūnṭs and towards the mountains of the Pīr Panṭsāl lies the Pargaṇa of *Bīru*. Its old designation BAHURŪPA is derived from the spring of that name which is situated at the present village of Bīru, 74° 39′ long. 34° 1′ lat., and is already referred to as a Tīrtha in the Nīlamata.[2] Abū-l-Faẓl knows the village and spring by an intermediate form of the name, *Bīruwā*, and mentions the miraculous power of the spring to heal leprosy.[3] Close to the village of Bīru is *Sun°pāh* in which we may, with an old glossator of the Rājataraṅgiṇī, recognize SUVARṆAPĀRŚVA, an Agrahāra of Lalitāditya.[4]

About four miles to the south-west of Bīru we reach *Khāg*, a considerable place. It is undoubtedly the KHĀGI or KHĀGIKĀ mentioned by Kalhaṇa as an Agrahāra both of King Khagendra and of Gopāditya.[5]

Some miles north of Khāg an isolated spur known as *Pōṣkar* projects into the level plain from the slopes of the Pīr Panṭsāl Range. At its eastern foot is the *Puṣkaranāga*, referred to as a Tīrtha in the Nīlamata and several older Māhātmyas, and still the object of a regular pilgrimage.[6] Of the route which leads down into Bīru from the Tōṣ°-maidān Pass, and of KĀRKOṬADRAṄGA, the watch station on it, we have already spoken above.

Bīru and Dūnṭs are adjoined on the north by the Pargaṇa of *Māñch°hōm* which extends eastwards as far as the Vitastā.' It is probably intended by the name of *Mākṣāśrama* found in a single passage of Śrīvara and in the Lokaprakāśa.[7] The village of *Rat°sun*, situated 74° 38′ long. 34° 4′ lat., is probably, as indicated by an old gloss, the

1 Compare *Rājat.* notes i. 102; iv. 473; Kś. *Hukh°lit°r* is the direct phonetic derivative of the Skr. form.

2 See *Nīlamata*, 948, 1180, 1341 *sq.* The name Bahurūpa is given to the tract by *Jonar.* (Bo. ed.) 286, 840; *Śrīv.* ii. 19, iii. 159; iv. 620, and ought to have been shown on the map.

3 *Āīn-i-Akb.*, ii. p. 363.

4 See *Rājat.* iv. 673.

5 Compare *Rājat.* i. 90, 340.

6 See *Nīlamata*, 1021, 1347. There were several other Puṣkara Tīrthas in Kaśmīr. One was connected with the Sureśvarī pilgrimage and probably situated in Phākh; see *Śarvāv.* v. 56 *sqq.*

7 See *Śrīv.* iv. 351.

ARIṢṬOTSĀDANA of the Rājatarangiṇī.[1] From this form the modern name of the village can be derived without difficulty. A temple is said to have been erected there by a queen of Bālāditya.

On the Vitastā some six miles below Srinagar is the small village of *Malur* which on the authority of Rājānaka Ratnakaṇṭha may be identified with MALHĀṆAPURA, a foundation of King Jayāpiḍa.[2] *Zain°kōṭh*, situated near marshy ground about two miles south-east of it, preserves the name of Zainu-l-'ābidīn, its founder, and is mentioned as JAINAKOṬṬA by Jonarāja.[3]

Parihāsapura.

121. The Pargaṇa of *Par°spōr* (map 'Paraspoor') which lies next to Māñch°hōm, is one of small extent, but contains a site of great historical interest. It has received its name from the ancient PARIHĀSAPURA, which King Lalitāditya had built as his capital.[4] The identity of the name *Par°spōr* and *Parihāsapura* is evident on phonetic grounds and was well-known to the authors of the Persian abstracts of the Rājatarangiṇī. Yet curiously enough the site of Parihāsapura had remained unidentified until I visited the spot in 1892 and traced the ruins of Lalitāditya's great structures as described by Kalhaṇa, on the plateau known as the 'Par°spōr Uḍar.'

This plateau rises south-east of Shāḍ'pūr, between the marshes of Paṇz'nōr on the east and those of Hār°traṭh on the west. Its length is about two miles from north to south, and its greatest breadth not much over a mile. On the north this plateau is separated from the higher ground of Trigām by the Badrihēl Nāla which, as I have shown above, represents the old bed of the Vitastā previous to Suyya's regulation.[5] On the other sides it is surrounded by marshes which for a great part of the year are still accessible by boats. Its general elevation is about one hundred feet.

A broad ravine which cuts into the plateau from the south, and in which the village of *Divar* (map 'Diara') nestles, divides it into two parts. On the south-western portion are the ruins of two large temples, much decayed, but still showing dimensions which considerably exceed those of the great temple of Mārtāṇḍa. On that part of the Uḍar which lies to the north-east and towards the Badrihēl Nāla, there is a whole

1 *Rājat.* iii. 482.

2 Compare *Rājat.* iv. 484.

3 *Jonar.* (Bo. ed.), 1248.

4 For a detailed account of the site of Parihāsapura and its identification, compare Note *F*, Rājat. iv. 194–204. The large scale map added to Note *I* shows the position of the several ruins in detail.

5 See § 70.

series of ruined structures. Among these three great buildings attract attention. As an indication of their size it may be mentioned that the ruined mound which marks the central shrine of the northernmost building has a diameter of nearly 300 feet. Though it consists now only of a confused heap of massive blocks it still rises to a height of over 30 feet from the ground. The enclosing quadrangle which can also be traced, measures about 410 feet square. At some distance from this group of ruins there is another smaller one at the south-eastern extremity of the plateau now known as *Gurdan*.

I must refer for a more detailed account of these ruins and their relative position to the Note on Parihāsapura, *F*, appended to my translation of the Chronicle. Here it will suffice to point out that the four great temples of Viṣṇu Parihāsakeśava, Muktākeśava, Mahāvarāha, Govardhanadhara as well as the *Rājavihāra* with its colossal image of Buddha, which Kalhaṇa mentions as Lalitāditya's chief structures at Parihāsapura, must all be looked for among these ruins. Their extremely decayed condition makes an attempt at detailed identification difficult.

Still less we can hope to trace now the position of the numerous shrines, Liṅgas, Vihāras, etc., which are mentioned by Kalhaṇa as having been erected at the king's favourite residence by his queens and court.[1] One of the great ruins of the northern group shows features characteristic of a Vihāra and may be the Rājavihāra. Some clue is also furnished by the name *Gurdan* attaching to the isolated ruins above mentioned. Gurdan is the common Kaśmīrī form of the name *Govardhana*, and hence points to these ruins being the remains of the temple called GOVARDHANADHARA.

History of Parihāsapura.

The state of utter destruction in which the ruins of Parihāsapura, are now found, is easily accounted for by the history of the site. Parihāsapura ceased to be the royal residence already under the son of its founder. The Chronicle distinctly records of King Vajrāditya that he withdrew the various foundations which his father Lalitāditya had made there.[2] When a century later King Avantivarman effected his great regulation of the Vitastā, the bed of the river and its junction with the Sindhu was diverted to Shāḍ[1]pūr, nearly three miles away from Parihāsapura.[3] This change must have still more seriously diminished the importance of the latter. The ruinous condition into which Parihāsapura must have fallen only one and a half centuries after its foundation,

[1] See *Rājat.* iv. 207–216.

[2] *Rājat.* iv. 395.

[3] See above, §§ 70, 71.

is shown by the fact that Saṁkaravarman (A.D. 883–902) carried away from it materials for the construction of his new town and temples at *Pattana* (Paṭan).[1]

Some of the shrines of Parihāsapura, however, survived to a later period. Thus we find the colossal copper statue of Buddha at the Rājavihāra mentioned as one of the few sacred images which escaped being melted down in the reign of King Harṣa (A.D. 1089–1101). Also a great religious festival established at Parihāsapura by Lalitāditya seems to have been held still in Kalhaṇa's time.[2] In the rising which led to the downfall of Harṣa, Parihāsapura was occupied by the pretender Uccala.[3] The steep slopes of the plateau and the marshes around made it a position of military value. When Uccala had suffered a defeat some of the routed rebels threw themselves into the Rājavihāra, which was subsequently burned down. After this, Harṣa carried away and broke up the famous silver statue of Viṣṇu which had been placed by Lalitāditya in the temple of Parihāsakeśava.

The final destruction of the temples is attributed by Abū-l-Faẓl and the Muhammadan chroniclers to Sikandar Būt<u>sh</u>ikast. The former records the tradition that after the destruction of the lofty temple of 'Paraspūr' a copper tablet with a Sanskrit inscription was discovered which predicted its destruction 'after the lapse of eleven hundred years' by one Sikandar.[4] This prophecy *post factum* shows that its author, whoever he may have been, was rather weak in historical chronology. Parihāsapura had been founded only about six and a half centuries before Sikandar But<u>sh</u>ikast's time.[5] At the beginning of the eighteenth century the ruins seem still to have been in a somewhat better condition than now. Both Muḥammad 'Aẓīm and Nārāyaṇ Kaul mention them and speak particularly of fragments of a large monolithic column. Tradition seems to have connected these fragments with the pillar of Garuḍa which Kalhaṇa mentions as having been set up by Lalitāditya.[6] The huge square block of stone still visible on the top of the northernmost mound is perhaps one of them.

1 See *Rājat.* v. 161.

2 See *Rājat.* iv. 242 *sq.* For the temple of Rāmasvāmin which was seen empty in Kalhaṇa's time, compare iv. 275, 334 *sq.*

3 *Rājat.* vii. 1326 *sqq.*

4 See *Āin-i-Akb.*, i. p. 364.

5 Exactly the same tradition is now current among the Purohitas of Vijᵊbrōr about the destruction of the Vijayeśvara image. This alleged inscription is said to have run: *Ekādaśaśatam varṣaṁ Sikendaramahābala | bismilla iti mantreṇa naśyante Vijayeśvarāḥ ||* The curious Sanskrit of this doggrel is an indication that its author may probably have belonged himself to the noble guild of the Bāchbaṭṭas.

6 Compare WILSON, *Essay*, p. 50; also footnote 16 to Note F, on Parihāsapura.

The ruins of Parihāsapura have served ever since S'aṁkaravarman's time as quarries for stone-material. Their position near to navigable water-channels made them particularly convenient for this purpose. Since 1892 when I first saw the ruins, till 1896 many large stone-blocks have found their way as road metal into the new Tonga Road which passes the plateau on the south. On my report steps were subsequently taken by the Darbār to stop this vandalism and prevent its recurrence.

Trigrāmī; Phalapura.

122. We have already above when describing the old bed of the Vitastā near Parihāsapura, had occasion to refer to the village of *Trigām*, the ancient TRIGRĀMĪ. It lies about one and a half miles to the north-east of the Par^{a}spōr ruins. The place is mentioned already in Lalitāditya's time in connection with an affray which took place at Parihāsapura.[1] The *Bōn^{a}sar* (* Bhavanasaras ?) lake to the west of Trigām is visited as a subsidiary Tīrtha on the Kapālamocana pilgrimage. The ruined temple south of Trigām which I believe may be identified with the VAINYASVĀMIN temple, has already been mentioned in our remarks on the site of the old confluence.

A ruined site which lies opposite to Vainyasvāmin on the western side of the Trigām swamp, may for reasons set forth elsewhere be taken for the old *Viṣṇusvāmin* temple.[2] This is named by Kalhaṇa as having been situated opposite to the Vainyasvāmin shrine on the other side of the old confluence. The passage of the Chronicle describes the temple of Viṣṇusvāmin as belonging already to Phalapura, while Vainyasvāmin was counted with Parihāsapura.

From this and some other indications I conclude that PHALAPURA was the designation of a small territorial subdivision which probably extended along the present left bank of the Vitastā near Shāḍ^{i}pūr.[3] The site at which I locate the Viṣṇusvāmin temple, was included in recent times in the riveraine Pargaṇa of Sāiru-l-mawāẓi' Pāyin (map 'Salimozapaieen'). This, we know from Abū-l-Faẓl, was created already before Akbar's time and probably absorbed Phalapura as well as other minor tracts.[4] Phalapura had received its designation from a locality of that name which Lalitāditya had founded apparently before Parihāsapura,[5] just as the latter gave its name to the Par^{a}spōr Pargaṇa.

[1] See *Rājat.* iv. 323 *sqq.*

[2] Compare *Rājat.* Note *I*, v. 97–100, § 12.

[3] See *Rājat.* Note *I*, § 13.

[4] See *Āin-i-Akb.*, ii. p. 367.

[5] Compare *Rājat.* iv. 184, 673.

Jayapura.

Descending by the left bank of the Vitastā for about five miles below Shādipūr, we approach the site of king Jayāpīḍa's capital, the ancient JAYAPURA.[1] It is marked by the present village of *Andᵊrkōṭh*. This consists of two distinct parts. One lies on an island in the marshes opposite Sambal and the other facing the former on the strip of land which separates these marshes from the Vitastā. On the island there are conspicuous remains of ancient temples which have been first examined and described by Prof. Bühler.[2] They are attributed by the local tradition to King 'Jayāpiḍ.' The identity of Andᵊrkōṭh with King Jayāpīḍa's town is also well-known to the Śrīnagar Paṇḍits. As Śrīvara still uses the term Jayapura or Jayāpīḍapura for the designation of the present Andᵊrkōṭh, we can easily understand the survival of the tradition.

Kalhaṇa's description of the town indicates clearly the situation of the latter and also accounts for its modern name. Jayāpīḍa according to this notice had the castle (*koṭṭa*) of Jayapura built in the middle of a lake, after having the ground required for it filled up, as the legend asserts, by the help of Rākṣasas. There he constructed a large Vihāra with Buddha images, a temple of Keśava (Viṣṇu), and several other shrines; other sacred structures were erected by his ministers. Besides Jayapura the king built on ground recovered from the lake another place, called DVĀRAVATĪ, in imitation of Kṛṣṇa's famous town by the sea-shore. Kalhaṇa notes that in his own time Jayapura was popularly designated as the 'Inner Castle' (*ābhyantara koṭṭa*) while Dvāravatī was known as the 'Outer Castle' (*bāhya koṭṭa*).

The present name ANDᵊRKŌṬH (from Skr. **Antarakoṭṭa*) is the direct derivative of this popular designation of Jayapura. It has in the course of time been extended also to the site on which originally Dvāravatī stood. In my note on the passage I have shown that Jayapura must be identified with the island portion of Andᵊrkōṭh, while the remains in that part of the village which lies on the lake shore opposite, belong to Dvāravatī. These remains are far less extensive than those on the island. This is in full agreement with the fact that Kalhaṇa men-

1 For a detailed note on the position of the twin towns Jayapura-Dvāravatī, see *Rājat.* iv. 501–511. For a map showing the site on a larger scale refer to Note *I*, v. 97–100.

2 See *Report*, pp. 13 *sqq.* where the topography and ruins of Andᵊrkōṭh are described in detail. General Cunningham had already heard of the identity of Andᵊrkōṭh with Jayāpīḍa's town but he does not seem to have visited the place; *Anc. Geogr.*, p. 101. Owing to the erroneous location of Parihāsapura on the *right* bank of the Vitastā opposite Sambal, there is a good deal of confusion in his notes on the two capitals.

tions great religious buildings only in Jayapura and not in Dvāravatī. The latter is, indeed, referred to only in connection with the foundation of Jayapura and does not appear ever to have been a place of importance. We can thus understand why its original name Dvāravatī and its subsequent designation 'Outer Castle' have both completely disappeared. The distance between the island and the opposite lake shore being only about four hundred yards at the narrowest point, the name of the far more important 'Inner Castle' was naturally extended also to this outlying suburb.

The term *koṭṭa* which Kalhaṇa repeatedly applies to Jayapura, and which is contained also in its popular designation, is justified by its position surrounded on all sides by water.[1] The limited extent of the island precludes the belief of Jayapura ever having been a populous place. But it retained a certain importance far longer than Parihāsapura and served occasionally as a royal residence even in late times. Queen Koṭā, the last of the Hindu rulers of Kaśmīr, retired to Jayapura, and there she was murdered by her husband, the adventurer Shāhmīr (A.D. 1339).[2] Zainu-l-'ābidīn restored the town which had fallen into decay and built there a new palace on the lake-shore.[3]

We have no distinct information as to the old course which the Vitastā followed in the neighbourhood of Jayapura previous to Avantivarman's regulation. If our views on the subject as above indicated are right, the main channel of the river must then have passed through the marshes west of Jayapura. Notwithstanding the change subsequently effected, Jayāpiḍa's town did not lose its convenient access to river communication. The great canal known as *Nōr* which, as we saw, is in reality nothing but an old river-bed, runs but a short distance to the south-west of And^{a}rkōṭh. A branch of it which is much used by boats even at the present day though not shown on the map, passes still actually along the old Ghāṭs on the south side of the And^{a}rkōṭh island. It seems probable that Jayapura owed its preservation from the fate of Parihāsapura in part at least to the retention of a convenient waterway.

In Abū-l-Faẓl's time And^{a}rkōṭh gave its name to a separate small Pargaṇa.

District of Bhāṅgila; Pattana.

123. From the marshy tracts south of the Volur which we have approached at And^{a}rkōṭh, we may return once more to Par^{a}spōr. Crossing the swamps formed west of the Par^{a}spōr plateau by the

1 *Rājat.* iv. 506, 512; vii. 1625. Śrīvara, iv. 540, 545, applies to Jayapura the expression *durga*, 'fort.'

2 See *Jonar.* 300.

3 See *Śrīv.* i. 250 *sqq.*

Sukhnāg and other hill streams, we come to the considerable district of *Bāngil*. It is often referred in the Rājataraṅgiṇī and the other Chronicles by its ancient name of BHĀṆGILA.[1] No old localities belonging to it are mentioned in our texts, unless we may count with Bāngil the closely adjacent *Paṭan* situated on the shore of the Pambāsar marsh, circ. 74° 37′ long. 34° 10′ lat.

This large village occupies the site chosen by King Saṁkaravarman (A.D. 883–902) for the town which was to bear his name.[2] Kalhaṇa, however, informs us that *Saṁkarapura* "subsequently lost its proper appellation and became known only by the name PATTANA, 'the town.'"[3] This somewhat general designation still survives in the present *Paṭan*. Kalhaṇa sees in this disappearance of the original appellation the just retribution of fate for the king's cruelty and other bad qualities. Yet the old name must have long lingered on by the side of the popular 'Pattana.' For Kṣemendra mentions Saṁkarapura, and Kalhaṇa himself speaks of the 'town of Saṁkaravarman' when subsequently referring to events of his own time.[4] Paṇḍit tradition too has retained a recollection of the founder of Pattana and its original name.

Saṁkaravarman is said to have carried off "whatever was of value at Parihāsapura," in order to raise the fame of his own town. At the same time Kalhaṇa plainly tells us that "what gave fame to that town was only what is still to be found at Pattana,—manufacture of woollen cloths, trade in cattle, and the like."[5]

The only ancient remains of any pretension which can now be found at Paṭan, are, in fact, the ruins of the two temples which were erected there by Saṁkaravarman and his queen Sugandhā.[6] These shrines which bore the names of *Saṁkaragaurīśa* and *Sugandheśa* are structures of no great dimensions and are without the fine quadrangular courts which enclose all more important Kaśmīrian temples. They have been fully described by General Cunningham and others. Kalhaṇa when mentioning these buildings ironically alludes to kings who like bad poets take the materials for their works from others' property. This combined with the immediately following mention of Saṁkaravarman's exploitation of Parihāsapura, makes it probable that the building materials for these very temples were taken from the ruins of Parihāsapura. This could have easily been done, owing to the convenient water-

1 See *Rājat.* vii. 498 note.
2 See *Rājat.* v. 156 note.
3 Compare v. 213.
4 Compare *Samay.* ii. 13; *Rājat.* viii. 2488, 3130.
5 *Rājat.* v. 161 *sq.*
6 Compare *Rājat.* v. 158 note.

route offered by the marshes which stretch between Parihāspōr and Paṭan, a distance of only seven miles.

Though Śaṁkarapura owed thus to its founder but little that could secure distinction, yet the site he had chosen for it was one likely to retain some importance. Paṭan still lies on the direct road between Śrīnagar and Bārāmūla, reckoned at two daily marches, and has probably always just as now been the half-way station between the two places. Considering that Bārāmūla is the starting point of the route to the west, traffic and trade were thus sure to be attracted to Śaṁkaravarman's town. We find it referred to as a local centre still in Kalhaṇa's time, and it has remained to the present day a large and thriving place.

Paṭan figures as a separate Pārgaṇa in Abū-l-Faẓl's list. A popular tradition has it that when Tōdar Mal, Akbar's minister, was arranging for the redistribution of Pargaṇas, he inadvertently omitted the Paṭan village at which he was just then encamped. To remedy the mistake Paṭan with its immediate vicinity was made into an additional Pargaṇa.[1] However this may be, we find Paṭan subsequently named as the chief place of the Tilaʰgām Pargaṇa.[2] At the last settlement it became the headquarters of one of the new Taḥsīls.

The Pambasar lake which stretches to the east of Paṭan as far as the 'Gond Ibrahim' and 'Adin River' of the map, is referred to by Kalhaṇa under the name of PAMPĀSARAS. King Harṣa seems to have extended or regulated it.[3] The Karēwa ground to the west of Paṭan with the deep valleys which intersect it, forms the Pargaṇa of Tilaʰgām. It is mentioned in the Fourth Chronicle, 780, by the name of TAILAGRĀMA.

Pratāpapura.

About four miles to the north-west of Paṭan and on the high road to Bārāmūla lies *Tāpar*, a considerable village. On the evidence of an old gloss and several passages of the Chronicles, it can be safely identified with the ancient PRATĀPAPURA.[4] The latter was founded by King Pratāpāditya-Durlabhaka, the father of Lalitāditya, probably in the second half of the seventh century. When visiting the place in 1892 I found close to the road two ruined mounds covered with large slabs and architectural fragments evidently marking the sites of old temples. Since then, I am informed, most of these remains have been turned into road metal by the native contractors employed in the construction of the new cart-road to Śrīnagar.

1 See BATES, *Gazetteer*, p. 2.
2 See MOORCROFT, ii. p. 113; VIGNE, ii. 166.
3 See *Rājat.* vii. 940 note.
4 Compare *Rājat.* iv. 10 note.

District of Kruhin.

124. The district through which the Vitastā flows immediately before leaving the Valley, bears now the name of *Kruhin*. The ancient form of this name is unknown unless the Lokaprakāśa's 'Krodhanaviṣaya' may be connected with the tract. Kruhin extends along both sides of the river, but its greater portion lies on the left bank.

Proceeding on the road towards Bārāmūla and at a distance of about six miles from the latter place, we pass on our right the village of *Kāṇispōr*. It is identified by an old glossator of the Rājataraṅgiṇī and by the Persian Chroniclers with the ancient KANIṢKAPURA. The latter is mentioned in the Rājataraṅgiṇī as a town founded by the Turuṣka king Kaniṣka,[1] whom we know as the great Indo-Scythian or Kuṣana ruler from the coins and Buddhist tradition. There are no conspicuous remains above ground at Kāṇispōr, but old coins and carved stones are occasionally extracted from an old mound near the village.

Varāhamūla.

We have already had occasion to speak of the important position occupied by the ancient twin towns HUṢKAPURA and VARĀHAMŪLA. Built on the banks of the Vitastā immediately above the gorge through which the river leaves the Valley, they form the starting-point on the great route of communication to the west. It is unnecessary to refer here again to the commercial and other advantages which have made this site one of great importance from ancient times to the present day.

Varāhamūla, situated on the right river-bank, has left its name to the present town of *Varahmul*, usually called *Bārāmūla* by Panjābīs and other foreigners.[2] The name Varāhamūla or Vārāhamūla—both forms occur in our texts—is itself derived from the ancient Tīrtha of Viṣṇu Ādi-Varāha who was worshipped here evidently since early times. From it the site of the town and its whole neighbourhood received also the designation of *Varāhakṣetra*. Various legends related at length in the Varāhakṣetramāhātmya and often alluded to in the Nīlamata and the other Māhātmyas, connect this sacred site and the Tīrthas of the immediate neighbourhood with the Varāha or Boar incarnation of Viṣṇu. An abstract of these legends as well as an accurate description of the scanty remains of ancient date to be found at the several Tīrthas, has been given by Prof. Bühler.[3]

[1] Compare *Rājat.* i. 168 note. General Cunningham's suggested identification of Kaniṣkapura with 'Kāmpōr,' on the road from Śrīnagar to Supiyan, is unsupported by any evidence. The place is really called Khāmpōr and has no ancient remains whatever.

[2] For detailed references regarding *Varāhamūla* and *Varāhakṣetra*, see *Rājat.* vi. 186 note.

[3] See *Report*, pp. 11 *sqq.*

Temple of Varāha.

The ancient temple of Varāha which seems to have been one of the most famous shrines of Kaśmīr, is repeatedly mentioned by Kalhaṇa. According to the tradition of the local Purohitas it stood near the site of the present *Koṭitīrtha*, at the western extremity of the town and close to the river-bank. Some ancient Liṅgas and sculptures found at the Koṭitīrtha may have originally belonged to the temple. The destruction of its sacred image is noted by Jonarāja in the reign of Sikandar Būt̤hikast.[1] A short distance below this site where a steep spur runs down to the river-bed, stood the ancient watch-station, still known as *Drang*, which has already been described. A bridge over the Vitastā existed at Varāhamūla already in old times.[2]

It cannot be doubted that Varāhamūla is a very ancient place. It enjoyed the advantage of being on the right river-bank, which is followed by the old route down the Vitastā Valley. But on the other hand the contracted nature of the ground which it occupies, between the hill-side and the river, did not favour the development of a large town. On this account we find that the twin town of HUṢKAPURA built on the open plain of the opposite bank was in ancient times the larger of the two places.

Huṣkapura.

Huṣkapura is mentioned by Kalhaṇa as the town built by King Huṣka, the Turuṣka, and is often referred to in his subsequent narrative.[3] Its name survives in that of the small village of *Uṣkūr*, situated about two miles to the south-east of the present Bārāmūla. The identity of Uṣkūr and Huṣkapura, correctly noted already by General Cunningham,[4] is well-known to Śrīnagar Paṇḍits, and is indicated also by an old glossator of the Rājataraṅgiṇī. Kalhaṇa in one passage distinctly includes Huṣkapura within Varāhakṣetra, *i.e.*, the sacred environs of the Varāha Tīrtha,[5] and the same location is implied by numerous other references in the Chronicle.

King Huṣka of the Rājataraṅgiṇī has long ago been identified with the Indo-Scythian ruler who succeeded Kaniṣka, the Huviṣka of the inscriptions and the OOHϷKI of the coins. The foundation of Huṣkapura falls thus probably within the first century of our era. Hiuen Tsiang, as we saw, spent his first night after passing through the western entrance of the kingdom, in a convent of *Hu-se-kia-lo* or Huṣkapura. Albērūnī too knows 'Ūs̱hkārā' opposite to Bārāmūla.

1 Compare *Jonar.* 600.

2 See *Rājat.* viii. 413.

3 For detailed references as to Huṣkapura: Uṣkūr, see *Rājat.* i. 168 note.

4 See *Anc. Geogr.*, pp. 99 *sq.*

5 See vi. 186.

Kalhaṇa mentions Huṣkapura far more frequently than Varāhamūla. The conclusion to be drawn herefrom as to the relative importance of the two places in Hindu times, is confirmed by the frequent references which the Chronicle makes to religious buildings erected in Huṣkapura. Of King Lalitāditya-Muktāpīḍa it is recorded that he built there the great temple of Viṣṇu *Muktasvāmin* and a large Vihāra with a Stūpa.[1] Kṣemagupta who sought the sacred soil of Vārāhakṣetra in his fatal illness, had founded two Maṭhas at Huṣkapura.[2]

At present foundations of ancient buildings can be traced at numerous points of the plain which stretches from the left river-bank towards the low hills behind Uṣkür. These remains as well as two colossal Liṅgas still *in situ* have already been noted by Bishop Cowie.[3] About 400 yards to the west of the village are the much-damaged remains of a Stūpa, which had been found still intact by Bishop Cowie and photographed in that condition by Major Cole (1870). Subsequently it was dug into and partly levelled down "by some Ṣāhib's order," as the villagers told me. Of this excavation I have not been able to trace a report. But General Cunningham refers to an ancient coin of the Taxila type which was found in this Stūpa and had come into his possession.[4]

It is possible that this Stūpa was identical with the one which King Lalitāditya erected at Huṣkapura. Of the Vihāra which Kalhaṇa mentions in connection with the king's Stūpa, I have shown elsewhere that it was in all probability the same convent which Ou-k'ong refers to under the name of *Moung-ti* Vihāra.[5] The *Moung-ti* of the Chinese transcription seems to represent a prakritized form of the shortened name *Mukta* or *Muktā*. The latter forms which are abbreviations (*bhīmavat*) for *Muktāpīḍa*, occur also in the designations of other religious buildings erected by that king (Muktākeśava, Muktasvāmin).

As we do not meet with the name of Huṣkapura in any of the later Chronicles it may be assumed that its importance did not survive the time of Hindu rule.

1 See *Rājat.* iv. 188.
2 *Rājat.* vi. 186.
3 See *J. A. S. B.*, 1866, p. 123.
4 See *Coins of Anc. India*, p. 62.
5 Compare *Notes on Ou-k'ong*, pp. 5 *sqq.*; *Rājat.* iv. 188 note.

Section IX.—The Northern Districts of Kramarājya.

125. The ancient localities in the Vitastā Valley below Varāhamūla have been noted by us already in connection with the route which leads through it. We may therefore proceed now to those Parganas of the ancient Kramarājya which lie to the north of the river and the Volur lake.

District of Śamālā.

The district which adjoins Kruhin in this direction, is known as *Hamal* (map 'Hummel'). Its ancient name was Śamālā from which the former designation is the direct phonetic derivative.[1] Śamālā is very frequently mentioned in the last two Books of the Rājataraṅgiṇī, particularly on account of its feudal chiefs or Ḍāmaras who played a prominent part in all the civil wars of the later reigns. The pretender Bhikṣācara in particular had his most powerful adherents in Śamālā and often took refuge with them. The village of Vanagrāma which is mentioned on one of these occasions, is probably identical with the present *Vanyām*, situated circ. 74° 25′ long. 34° 19′ lat.[2] *Kākaruha*, another place in Śamālā, referred to in connection with Bhikṣācara's campaigns, can no longer be traced.

Tīrtha of Svayaṁbhū.

To the north of Hamal we reach the Pargaṇa of Mach[1]pūr (map 'Mochipoora.') Its ancient name is nowhere mentioned. In it lies the sacred site of Svayaṁbhū which owing to the apparently volcanic phenomenon there observed has from early times been renowned as a Tīrtha. Kalhaṇa in his introduction duly notes the 'Self-created Fire' (*Svayaṁbhū*), which "rising from the womb of the earth, receives with numerous arms of flame the offerings of the sacrificers."[3]

The spot meant is still known as *Svayaṁbhū*, or to the villagers as *Suyam*. It lies on a low ridge about half a mile south-west of the village of Nich[a]hōm (not shown on map) and about one and a half miles north of Tsak[a]vaḍar (map 'Sheikwadda.') Visiting it in 1892 I found there in a shallow hollow the soil bright red like burned clay and furrowed by narrow fissures. In certain years steam has been known to issue from these fissures. The ground then becomes sufficiently hot to boil the Śrāddha offerings of the pilgrims who at such times flock to the site in great numbers. The phenomenon which may be either truly volcanic or, according to a modern authority, be caused by hidden seams of coal taking fire, was last observed in the year 1876. Occurrences at

1 See *Rājat.* vii. 159 note.

2 See *Rājat.* viii. 1438.

3 See *Rājat.* i. 34, and for further references the note thereon.

the beginning of the present century are referred to by Mr. Vigne and Dr. Falconer.[1] Abū-l-Faẓl too mentions the phenomenon at 'Soyam.'[2]

Considering the rarity of the occasions when this manifestation of the 'Self-created Fire' is observed and the pilgrimage performed, the total absence of ancient remains cannot surprise us. There is, however, a Māhātmya of the Tīrtha, and the latter is also referred to in the Nīlamata. A pilgrimage which King Uccala (A.D. 1101–11) made to Svayaṁbhū gives Kalhaṇa occasion to acquaint us with some localities of the neighbourhood.[3] The king who was stopping in Kramarājya, is said to have started for the village of VARHAṬACAKRA with a small retinue to see the miracle there. On his way which took him past the village of KAMBALEŚVARA, he was set upon in a deep mountain gorge by robbers from whom he escaped only with difficulty.

I believe, the places mentioned in connection with this adventure, can still be identified without difficulty. Varhaṭacakra is probably the present *Ts̱akᵃvaḍar*, *ts̱akᵃ* being the ordinary Ks. form for Skr. *cakra* and *vaḍar* the phonetic derivative of *Varhaṭa-*.[4] Cases of village names in which the two component parts, being originally distinct names, can alternate in their position, are by no means unfrequent in Kaśmīr. Thus we have now *Dārā-Sādᵃpōr* and *Sādᵃpōr-Dārā*, etc.

In *Kambaleśvara* we may safely recognize the present village of *Krambhar*, situated about six miles north-east of Svayaṁbhū; for the ending *-har* as the derivative of Skr. *-eśvara*, compare *Triphar* < *Tripureśvara*, etc.[5] The way from Krambhar to Svayaṁbhū leads through the valley of the Panjtar stream. The latter as I convinced myself by personal inspection on a tour in 1892, passes above Rājpōr a narrow thickly-wooded gorge. The path which follows the tortuous course of the stream at the bottom of the gorge, offers excellent opportunities for an ambuscade such as described by Kalhaṇa.

Badᵃrkāl, a small village, about four miles south-east of Krambhar, has a small local Tīrtha marked by a spring and some old Liṅgas. It is visited on the pilgrimage to Svayaṁbhū and mentioned by the name of BHADRAKĀLĪ in the Māhātmya of the latter.

District of Uttara.

126. The Pargaṇa of Uttar stretching along the foot of the range towards the Kiṣangangā, forms the extreme north-west of the Kaśmīr Valley. A passage

1 See VIGNE, *Travels*, ii. p. 280; LAWRENCE, *Valley*, p. 42.

2 *Ain-i-Akb.*, ii. p. 365.

3 Compare *Rājat.* viii. 250 *sq.* note.

4 For medial Skr. *r* > Ks. *ḍ*, compare *e.g.*, *Bhaṭṭāraka*[*maṭha* > *Bṛḍᵘ*[*mar* for *ṭ* > *r*, *e.g. Kāṣṭhavāṭa* > *Kaṛᵗᵒvār*.

5 For detailed evidence on the phonetic points alluded to, see *Rājat.* viii. 250 note.

of the Rājataraṅgiṇī records its ancient name UTTARA, and refers also to GHOṢA as a locality situated in it.[1] The place meant is undoubtedly the present *Guṣ* situated in the centre of Uttar, near the confluence of the Kāmil River and the stream coming from Lōlau. It is the starting-point for the S'āradā pilgrimage and is mentioned correctly as *Ghoṣa* in the S'āradāmāhātmya.

About ten miles higher up the Kāmil river lies the village of Pāṇz[1]gām, circ. 74° 7′ long. 34° 29′ lat. I take its position from Major Bates' Gazetteer; the 'Atlas of India' map does not show the place. It is in all probability identical with PĀÑCIGRĀMĪ, mentioned by Kalhaṇa in connection with the surrender of the pretender Bhoja.[2] I have not been able to visit this portion of the district, and Major Bates' reference to Pāṇz[1]gām attracted my attention only after the preparation of my map.[3]

In the extreme north-east of Uttar and within a mile of each other, we have the old villages of *Drang* and *Hāy?hōm*, referred to by Kalhaṇa under their ancient designations of DRAṄGA and HĀYĀŚRAMA.[4] The latter place, as its name shows, marks the position of an old frontier watch-station towards the Kiṣangaṅgā. We have already seen that there is a route leading past it to S'ardi, the ancient Tīrtha of S'āradā situated on that river.

Draṅga and Hāyāśrama are both mentioned by Kalhaṇa in connection with the siege of the S'iraḥśilā castle which took place in his own time. A brief reference may therefore be made here both to this stronghold and the neighbouring shrine of S'āradā, though they are both situated outside the limits of the Kaśmīr Valley.

The Tīrtha of Śāradā.

127. The introduction of the Rājataraṅgiṇī mentions the temple of the goddess S'āradā amongst the foremost Tīrthas of Kaśmīr.[5] It was well known even far beyond the frontiers of Kaśmīr. Albērūnī had heard of it,[6] and a story recorded in a Jaina life of the great grammarian Hemacandra proves that its fame had spread even to far-off Gujrāt.

[1] See *Rājat.* vi. 281.

[2] See *Rājat.* viii. 3124.

[3] There seems to be good reason to suspect that TĀRAMŪLAKA, a place repeatedly referred to in connection with Bhojā's last campaign, lay somewhere in or near Uttar. Unfortunately this locality which is of importance also for other portions of Kalhaṇa's narrative, has not yet been identified; see note vii. 1307.

[4] For *Hāyāśrama*, see *Rājat.* viii. 2937 note; for *Draṅga*, viii. 2507 note, also Note *B*, i. 37.

[5] The position and history of the temple of Śāradā have been fully discussed in Note *B*, i. 37.

[6] See *India*, i. p. 117.

Notwithstanding this former celebrity the Śāradā shrine is now almost completely forgotten by the Paṇḍits of Śrīnagar and the great mass of the Brahman population of the Valley. Fortunately, however, tradition had been more tenacious in the immediately adjoining tracts of Kamrāz. Guided by it I was able to ascertain the position of the ancient Tīrtha at the present *Sardi*, situated circ. 74° 15′ long. 34° 48′ lat., on the right bank of the Kiṣangaṅgā.

My note on Rājat. i. 37 (*B*) gives a detailed account of the tour which in 1892 led me to the Tīrtha as well as a description of the ancient temple still extant at the site. The situation of the shrine corresponds exactly to Kalhaṇa's description. Immediately in front of it the sacred stream of the MADHUMATĪ falls into the Kiṣangaṅgā, while another confluence, that with the SARASVATĪ river coming from the north, is also visible from the temple.

In Jonarāja's time the shrine was still sufficiently popular to attract a visit even from Sultān Zainu-l-'ābidīn.[1] Soon afterwards apparently the miracle-working image of the goddess was destroyed. Abū-l-Faẓl, however, still notes the sanctity of the site and correctly indicates its position on the bank of the Madhumati.[2]

The subsequent neglect of this Tīrtha must be ascribed chiefly to the obstacles to the pilgrimage which arose from the troubled political condition of the Upper Kiṣangaṅgā Valley. The Bomba chiefs of the latter had made themselves independent in the later Mughal and Paṭhān times. Their predatory inroads often threatened the adjacent tracts of Kaśmīr while their own territory became practically inaccessible to peaceful pilgrims. It is only since the advent of the Sikhs that the pilgrimage to Śāradā's seat was revived. It is probable that the difficulties here briefly indicated must be held to account for the several substitute Tīrthas of Śāradā which are now to be found in various parts of Kaśmīr proper.

Śiraḥśilā Castle.

My visit to the old 'Śāradāsthāna' also enabled me to identify with certainty the site of the ŚIRAḤŚILĀ Castle. The latter had been the scene of a memorable siege by King Jayasiṁha's troops which Kalhaṇa describes at length.[3] The accurate topographical data furnished in this account prove clearly that the castle occupied the top of the steep ridge which projects into the Kiṣangaṅgā valley about two and a half miles below the Śāradā temple.

1 *Jonar.* (Bo. ed.) 1056–71. This visit apparently took place A.D. 1422.

2 *Āīn-i-Akb.*, ii. pp. 365 *sq.* Abū-l-Faẓl places Śāradā's stone temple "at two days' distance from Hāchāmūn," i.e. Hāyhōm.

3 *Rājat.* viii. 2492–2709. The position of *Śiraḥśilā* and the evidence for its identity with the 'Gaṇeś Ghāṭī' hill have been fully discussed in my Note *L*, viii. 2492.

The several incidents of the siege, in particular those connected with the attempted escape of the pretender Bhoja, became at once easily intelligible on a close inspection of this site. The ridge bears now the name of *Gaṇeś Ghāṭī*, from a curious rock formation on its side which resembles the head of an elephant and is accordingly worshipped as a 'Svayaṁbhū' representation of the elephant-faced god. It is very probable that the older name *Siraḥśilā* which means literally 'the rock of the head,' owed its origin also to this very rock.

Districts of Lōlau, Zain^{a}gīr.

128. Returning from our excursion to the Kiṣangaṅgā and the confines of the Dard country, we enter immediately to the east of Drang-Hāy^{a}hōm the Pargaṇa usually called *Lōlāb*. Its proper Kaśmīrī name is *Lōlau*, derived from Skr. LAULĀHA.[1] In the picturesque valley which forms this district, no old localities can be specified.

Lōlau is adjoined on the south by the Pargaṇa of Zain^{a}gīr which comprises the fertile Karēwa tract between the Volur and the left bank of the Pohur River. It received its present name from Zainu-l-'ābidīn who is credited with having carried irrigation canals from the Pohur to the Uḍar ground of JAINAGIRI.[2] The earlier name of this tract can no longer be traced.

The chief place in it is the town of *Sōpūr*, the ancient SUYYAPURA, the foundation of which by Suyya, Avantivarman's engineer, has already been mentioned.[3] Sōpūr which lies a short distance below the point where the Vitastā leaves the Volur, has retained its importance to this day, and is still a town of over 8000 inhabitants. It has during recent times been the official head-quarters for the whole of Kamrāz. From a passage of S'rīvara it appears that this had been the case already at an earlier period.[4] Relating a great conflagration which destroyed Suyyapura in Zainu-l-'ābidīn's time, this Chronicler tells us that in it perished the whole of the official archives relating to Kramarājya. The royal residence, however, escaped and the town itself was again built up by the king in great splendour. Of this, however, nothing has remained; nor does the town now show older remains of any interest.

The suggested identity of the village *Zōlur* (map 'Zohlar') in the north-west part of Zain^{a}gīr with JĀLORA once mentioned as a foundation of King Janaka,[5] is doubtful, resting only on the resemblance of

1 Compare *Rājat.* vii. 1241 note.

2 See *Jonar.* (Bo. ed.) 1449–56; also *Śrīv.* i. 562 sq.; iii. 59, 78.

3 Compare for Suyyapura, *Rājat.* v. 118 note.

4 Compare *Śrīv.* i. 560 *sqq.*

5 See *Rājat.* i. 98.

the names. The large village of *Bumai* (map 'Bamhai'), situated 74° 30′ long. 34° 22′ lat., may be Kalhaṇa's BHĪMATIKĀ. The name Bumai can be traced back without difficulty to the older form; but the context of the single passage in which Bhimatikā is mentioned, does not supply any evidence as to its location.[1]

District of Khûyāśrama.

Round the north shore of the Volur lake there stretches in a semi-circle the district of Khuy^{a}hōm. Its ancient name is given by Kalhaṇa as KHŪYĀŚRAMA while Śrīvara and the Lokaprakāśa, with a slight variation, call it Khoyāśrama.[2] The old route which led up to the *Madhumatī* stream and over the Pass of DUGDHAGHĀTA or Dud^{a}khut into the Darad territory on the Kiṣangaṅgā, has been already fully described.[3]

In connection with a Darad invasion which was directed into Kaśmīr by this route, we read of MĀTṚGRĀMA as the place where the invading force encamped.[4] This is certainly the present village of *Mātr^{a}gōm* situated close to the foot of the Trāg^{a}bal Pass, circ. 74° 43′ long. 34° 28′ lat. It lies just at the point where the route along the Madhumatī debouches into an open valley, and is the first place where a larger camp could conveniently be formed.

The tract on the north-east shore of the Volur appears in old times to have formed a separate small sub-division called EVENAKA. It is once mentioned by Kalhaṇa, and also referred to in the Tīrthasaṁgraha.[5] But the evidence is not sufficient for a certain location. To it may possibly have belonged also the village of *Sud^{a}rkōṭh*, circ. 74° 43′ long. 34° 18′ lat., which Śrīvara refers to by the name of SAMUDRAKOṬA.[6]

District of Lahara.

129. We have now reached the vicinity of the Sind Valley which forms the largest of the Parganas of Kaśmīr. The district now known as *Lār* comprises the whole of the valleys drained by the Sind and its tributaries as well as the alluvial tract on the right bank of that river after its entry into the great Kaśmīr plain.

Its ancient name was LAHARA, and by this it is mentioned in very

1 Compare *Rājat.* vii. 6; as to the relation of *Bumai* < *Bhimatikā* comp. *Bum^{a}-[zu* : *Bhīma*[*keśava.*

2 See *Rājat.* viii. 2695–98 note.

3 See above, § 56.

4 See *Rājat.* viii. 2775.

5 Compare *Rājat.* viii. 2695–98 note.

6 See *Śriv.* i. 400.

numerous passages of the Rājataraṅgiṇī and the later Chronicles.[1] The lands of the district seem to have been from early times in the hands of great territorial nobles. One family of Ḍāmaras resident in Lahara was powerful enough for its members to play the part of true kingmakers during a succession of reigns following after Harṣa.[2] It is probable that the great trade-route to Ladākh and Central Asia which passes through the district, added already in old times to its wealth and importance.

In the midst of the wide water-logged tract of the Sind Delta we find the ancient Tīrtha of TŪLAMŪLYA at the village now known as *Tul²mul*, situated 74° 48′ long. 34° 13′ lat. The Purohita corporation of Tūlamūlya is represented as a well-to-do and influential body already under King Jayāpīḍa.[3] The large spring of Tūlamūlya is sacred to Mahārājñī, a form of Durgā, and is still held in great veneration by the Brahman population of S'rīnagar. It is supposed to exhibit from time to time miraculous changes in the colour of its water, which are ascribed to the manifestation of the goddess. Owing to its convenient position the Tīrtha attracts large numbers of pilgrims from the capital. Abū-l-Faẓl notices the place and its marshy surroundings.[4] About two and a half miles to the east of Tul²mul lies the village of Dud²rhōm, on the main branch of the Sind which becomes here navigable. It is repeatedly spoken of by S'rīvara under its old name of DUGDHĀŚRAMA.[5]

Ascending the valley we come to the large village of *Maṇ¹gām*, situated a short distance from the right bank of the river, 74° 52′ long. 34° 17′ lat. It is the MAYAGRĀMA of Kalhaṇa's Chronicle, mentioned in connection with a campaign of Bhikṣācara in Lahara.[6] In the time of King Saṁgrāmarāja (A.D. 1003–28) Mayagrāma gave its name to a separate fund (*Mayagrāmīṇagañja*) which Queen S'rīlekhā had established evidently with the revenue assigned from this village.[7] Maṇ¹-gām-Mayagrāma still owns a large area of excellent rice-fields. The village itself contains no ancient remains; but a short distance above it, at the foot of the spur which descends from a high alp known as

1 Compare for the identification of *Lār* and *Lahara*, note *Rājat.* v. 51. The authors of the St. Petersburg Dictionary were already aware of it; see P. W. s. v. LAHARA.

2 Compare regarding the political part played by Janakacandra, Gargacandra and their descendants, *Rājat.* viii. 15 *sqq.*, 354 *sqq.*, 502 *sqq.*, etc. For an earlier instance of Ḍāmara power in Lahara, see v. 51 *sqq.*

3 See *Rājat.* iv. 638 note.

4 *Āīn-i-Akb.*, ii. p. 364.

5 *S'rīv.* iv. 110, 136, 263.

6 See *Rājat.* viii. 729.

7 Compare *Rājat.* vii. 126.

Mohand Marg, there is an ancient stone-lined tank filled by a fine spring known as Vuṭ[a]śan Nāg. This is visited as a Tīrtha by the Brahmans of the neighbourhood and is also mentioned under the name of *Uccaiḥśīrṇa Nāga* in the Haramukuṭa and several other Māhātmyas. About a mile above the village the high-road leading up the valley passes a shapeless mound of large slabs which undoubtedly belonged to an ancient temple.

Tīrtha of Cīramocana.

130. About four miles above Maṇ[i]gām on the left bank of the Sind we reach a site which has enjoyed sanctity from an early period. Close to the village of Prang (not shown on map) situated circ. 74° 55′ 30″ long. 34° 16′ 45″ lat., a small branch of the Kānk[a]nai River (*Kanakavāhinī*) flows into the Sind. This confluence is now visited by the pilgrims proceeding to the Haramukuṭa lakes as one of the chief Tīrthas on the route. In the modern Haramukuṭa Māhātmya it is designated as *Karaṅkatīrtha*. But I have shown that it is in reality identical with the ancient Tīrtha of CĪRAMOCANA mentioned in the Rājataraṅgiṇī, the Nīlamata and the old Nandikṣetramāhātmya.[1]

The Kānk[a]nai or Kanakavāhinī which is always named together with Cīramocana, is a sacred river as it carries down the waters of the holy Gaṅgā-lake below the Haramukuṭa Peaks.[2] This explains the importance attached to this 'Saṁgama.' The Haramukuṭa Māhātmya which shows its comparatively recent origin by many of its local names, metamorphoses the old Kanavāhinī into *Karaṅkanadī* and consequently also changes the name of its confluence into *Karaṅkatīrtha*.[3] King Jalauka, the son of Aśoka, whom the Chronicle represents as a fervent worshipper of Śiva Bhūteśa and of Nandīśa, is said to have ended his days at Cīramocana.

Tīrthas of Bhūteśa, Jyeṣṭharudra.

Our survey has already taken us to the sacred sites of BHŪTEŚA and JYEṢṬHARUDRA marked by the ruined temples at the present *Buth[i]śēr* high up in the Kānk[a]-nai Valley. They are closely connected with the Tīrthas of NANDIKṢETRA below the Haramukuṭa glaciers which have also been described.[4] The village of *Vāngath*, which is the highest permanently inhabited place in the valley, lies about two miles below Buth[i]śēr. It is named VASIṢṬHĀŚRAMA in the Māhātmyas and believed to mark the residence of the Ṛṣi Vasiṣṭha. Allusions in the Rājataraṅgiṇī and Nīlamata show that this legendary location is of old date.[5]

1 See *Rājat.* i. 149-150 note.

2 See above, § 57.

3 Regarding the local nomenclature of this Māhātmya, see above, § 31.

4 See above, § 57; also *Rājat.* notes i. 36, 107, 113; v. 55-59.

5 Compare *Rājat.* viii. 2430 note.

At the mouth of Kāṅkaṇnai Valley, and about two miles to the north-east of Cīramocana, is the hamlet of *Bāravul* which Kalhaṇa mentions as an Agrahāra of King Jalauka under the name of VĀRABĀLA.[1] A large sculptured Liṅga base which I found here in 1891, shows the antiquity of the place.

Upper Sind Valley.

131. Returning to the main valley we come, about three miles above Cīramocana, to the large village of *Kangan* situated on the right bank on the Sind. It is, perhaps, identical with KAṄKAṆAPURA which Queen Diddā is said to have founded in commemoration of her husband Kṣemagupta, known by the epithet of 'Kankaṇavarṣa.'[2] No old localities can be identified with certainty in the Sind Valley until we reach the village of *Gagangīr*, situated two marches above Kangan, circ. 75° 15′ long. 34° 18′ lat. This is undoubtedly the GAGANAGIRI of Jonarāja, and the Fourth Chronicle.[3] The place is mentioned in both texts in connection with invasions which were made into Kaśmīr over the Zōjī-Lā Pass. The first was that of the Bhauṭṭa Riñcana, the second the famous inroad of the Mughal leader Mirzā Ḥaidar (A.D. 1532).[4] The account which the latter himself has left us of his exploit, fully explains the special reference made to Gaganagiri by the Hindu Chronicler.

Defile of Dhuḍāvana.

About three miles above Gagangīr two rocky spurs descend from opposite sides into the valley and reduce it to a narrow gorge (see map). The passage of this defile was until recent improvements of the road distinctly difficult, as large fallen rocks blocked the narrow space between the right bank of the river and the high cliffs rising above it. It is at this point of the valley which Mirzā Ḥaidar calls 'the narrow defile of Lār,' that the Kaśmīr chiefs vainly attempted to stop the brave Turks of the invader's advanced guard.

Kalhaṇa's Chronicles shows that the defile here indicated had witnessed fighting already at an earlier epoch. When King Sussala's forces had driven Gargacandra, the great feudal chief, from his seats in Lahara, we are told that the Ḍāmara with his followers retired to the mountain called DHUḌĀVANA. There he was long besieged by the troops

1 See *Rājat.* i. 121 note.

2 See *Rājat.* vi. 301.

3 Compare *Jonar.* (Bo. ed.), 197, and Fourth Chron. 316. The old name of the locality ought to have been entered in the map. The Bombay edition of the Fourth Chron. wrongly reads *gamananiryanta* for *gaganagiryanta* of the MSS.

4 See *Tārīkh-i Rashīdī*, p. 423. Mr. ELIAS in his note on the passage has quite correctly identified the defile meant by his author. The Fourth Chronicle names the autumn of the Laukika year [460]8 as the date of the event which agrees exactly with Mirzā Ḥaidar's A.H. 939 Jamād II (December, 1532 A.D.).

"of the king who was encamped at the foot of the mountain." In my note on the passage I have shown that the name *Dhuḍāvana* survives in *Dūrūn Nār* (map 'Darnar'), the appellation of the high spur which descends into the Sind Valley from the south between Gagangīr and Sunᵃmarg.[1] It is exactly at the foot of this spur that the river passes through the gorge above described. The position taken up by the king's opponent is thus fully explained.

Gagangīr being already 7400 feet above the sea, is the last permanently inhabited place in the valley. Some twenty-five miles higher up we arrive at the Zōjī-Lā Pass. Here we have reached the limits of Kaśmīr as well as the end of our survey.

[1] See *Rājat.* viii. 595 *sqq.*—*Dārūn* is the direct phonetic derivative of *Dhuḍāvana*. *Nār*, the Ks. equivalent of Skr. *nāḍa*, the Anglo-Indian 'Nullah,' is often found as the second part in names of high hill-ranges in Kaśmīr; compare, *e.g.*, the 'Soornar' and 'Baibnar' of the map, east of the Haramukh Peaks.

SUPPLEMENTARY NOTE *AA*.—§ 29.

Māhātmyas of Kaśmīrian Tīrthas.

The following is a complete list of the Māhātmya texts acquired by me in Kaśmīr. The numbers in the fourth column refer to the manuscripts representing these texts in my collection. Where the same text is found in several Manuscripts, the number of the best copy has been shown first. In the column of Remarks the Tīrtha to which the Māhātmya refers has also been indicated, as well as the paragraph of the present Memoir in which it has been discussed.

Serial No.	Name of text.	Alleged source.	Nos. of MSS. in my collection.	Remarks.
1	Amaranāthamāhātmya ...	Bhṛṅgiśasaṁhitā ...	8, 7	Amaranātha, § 59.
2	Amareśvara Kalpa ...	Vāthulatantra ...	214	Ditto. (Copied from Poona MS. No. 49).
3	Ardhanārīśvaramāhātmya	Ādikalpa ...	251	Ardhanārīśvara, § 113.
4	Iśālayamāhātmya ...	Bhṛṅgiśasaṁhitā ...	43	Iśeśvara, § 103.
5	Kapaṭeśvaramāhātmya ...	Haracaritacintāmaṇi	43	Kapateśvara (Pāpasūdana), § 112.
6	Kapālamocanamāhātmya	Bhṛṅgiśasaṁhitā ...	43, 19, 20, 21, 22	Kapālamocana, § 116.
7	Kedāratīrthamāhātmya...	Bhṛṅgiśasaṁhitā ...	49	Tīrtha in Varāhakṣetra.

Serial No.	Name of text.	Alleged source.	Nos. of MSS. in my collection.	Remarks.
8	Kedārapurāṇa ...	.....	215	Doubtful (copied from Poona MS. No. 54).
9	Koṭitīrthamāhātmya ...	Bhṛṅgīśasaṁhitā ...	50	Koṭi Tīrtha, § 124.
10	Gaṅgodbhedamāhātmya	Ādipurāṇa ...	216	Bheḍā Tīrtha, § 117 (copied from Poona MS. No. 56.)
11	Gayāmāhātmya ...	.....	55	Gayā (near Shādipūr).
12	Gayāmāhātmya ...	Bhṛṅgīśasaṁhitā ...	54	Ditto.
13	Godāvarīmāhātmya ...	Bhṛṅgīśasaṁhitā ...	43	Godāvarī (Godharā), § 115.
14	Jaṭāgaṅgāmāhātmya ...	.....	43	Tīrtha at Gaṅgajaṭan, Pargaṇa Bīru.
15	Jyeṣṭhādevīmāhātmya ...	Bhṛṅgīśasaṁhitā ...	43	Jyeṣṭheśvara, § 102.
16	Tripurāprādurbhāva ...	Bhṛṅgīśasaṁhitā ...	43	Small Tīrtha near the Kanye Kadal, Srīnagar.
17	Trisaṁdhyāmāhātmya ...	Ādipurāṇa, Nandīśvarāvatāra.	43	Trisaṁdhyā, § 113.
18	Trisaṁdhyāmāhātmya ...	Nandīśvarāvatāra by Śivasvāmin.	67	Ditto.
19	Dhyāneśvaramāhātmya...	.....	75	Tīrtha in hills of Khuyāhōm.
20	Nandikṣetramāhātmya ...	Sarvāvatāra ...	77	Tīrthas of Nandikṣetra, § 57.
21	Naubandhanamāhātmya	.....	43, 85, 86	Naubandhana, § 41.
22	Piṅgaleśvaramāhātmya...	Haracaritacintāmaṇi	43, 88	Tīrtha at Pingilyun, Chrāṭh Pargaṇa.
23	Puṣkaramāhātmya ...	Bhṛṅgīśasaṁhitā ...	43	Puṣkara Tīrtha, § 120.

Serial No.	Name of text.	Alleged source.	Nos. of MSS. in any collection.	Remarks.
24	Bahurūpakalpa ...	Kaśmīratīrthamāhātmyasaṅgraha.	95, 96	Bahurūpa Nāga, § 120.
25	Bhadrakālīprādurbhāva	Mahābhārata, Vanaparva.	97	Bhadrakālī Tīrtha, § 125.
26	Mahādevagirimāhātmya	Bhṛṅgīśasaṁhitā ...	104	Mount Mahādeva, § 103.
27	Maheśvarakuṇḍamāhātmya.	Bhṛṅgīśasaṁhitā ...	43	Said to be in Shāhābād Pargaṇa.
28	Mārtāṇḍamāhātmya ...	Bhṛṅgīśasaṁhitā ...	43	Mārtāṇḍa, § 111.
29	Mārtāṇḍamāhātmya ...	Brahmapurāṇa, Kaśmīrakhaṇḍa.	217, 110	Ditto. (Copied from Poona MS. No. 78).
30	Mārtāṇḍamāhātmya ...	Bhaviṣyatpurāṇa ...	109	Ditto.
31	Mitrapathāmāhātmya ...	Ādipurāṇa ...	218	Uncertain. (Copied from Poona MS. No. 80).
32	Yogyālaṅkaraṇamāhātmya.	.....	43	Tīrtha on Ḍal, in Rāṇivōr quarter.
33	Rājñīprādurbhāva ...	Bhṛṅgīśasaṁhitā ...	43, 211	Tūlamūlya, § 129.
34	Rājñīmāhātmya ...	Bhṛṅgīśasaṁhitā ...	43	Ditto.
35	Varāhakṣetramāhātmya	Varāhapurāṇa ...	219, 143, 144	Varāha Tīrtha, § 124 (also in Poona MS. No. 85).
36	Vardhamāneśamāhātmya	.....	142	Vardhamāneśa; see § 31, note.
37	Vijayeśvaramāhātmya ...	Ādipurāṇa ...	220	Vijayeśvara, § 109. (Copied from Poona MS. No. 77).
38	Vijayeśvaramāhātmya ...	Bhṛṅgīśasaṁhitā ...	152	Ditto.
39	Vitastāmāhātmya ...	Bhṛṅgīśasaṁhitā ...	156, 153, 154	Tīrthas on Vitastā.
40	Vitastāmāhātmya ...	Ādipurāṇa, Kaśmīrakhaṇḍa.	252, 155	Ditto. (Copied from Poona MS. No. 88).

Serial No.	Name of text.	Alleged source.	Nos. of MSS. in my collection.	Remarks.
41	S'arvâvatâra... ...	.....	213	Copied from Poona MS. No. 94.
42	S'âradâpuramâhâtmya ...	Vitastâmâhâtmya ...	160	'Prayâga' at Shâḍ¹pûr, § 68.
43	S'âradâmâhâtmya ...	Bhṛṅgîśasaṁhitâ ...	43, 161	S'âradâ Tîrtha, § 127.
44	S'âradâmâhâtmya ...	Âdipurâṇa ...	43	Ditto.
45	S'ârikâpariccheda ...	Bhṛṅgîśasaṁhitâ ...	163, 162, 204	S'ârikâ Hill, § 95.
46	S'vetagaṅgâmâhâtmya ...	Bhṛṅgîśasaṁhitâ ...	43	Dugdhagaṅgâ (Chatr¶kul), § 67.
47	Sureśvarîmâhâtmya ...	Bhṛṅgîśasaṁhitâ ...	43, 176, 177	Sureśvarî, § 103.
48	Svayaṁbhvagnimâhâtmya	Bhṛṅgîśasaṁhitâ ...	43, 183, 184	Svayaṁbhû, § 125.
49	Haramukuṭagaṅgâmâhâtmya.	Bhṛṅgîśasaṁhitâ ...	185, 186, 210, 211	Haramukuṭa Lakes, § 57.
50	Haridrâgaṇeśamâhâtmya	Bhṛṅgîśasaṁhitâ ...	43	Said to be in Dachûnpôr Pargaṇa.
51	Harṣeśvaramâhâtmya ...	.....	194, 195, 196	Harṣeśvara § 105.

SUPPLEMENTARY NOTE *BB*.—§ 86.

The lists of Kaśmīr Pargaṇas.

The following table shows the names of Kaśmīr Pargaṇas as contained in the lists of Abū-l-Faẓl, Moorcroft, Von Hügel, Vigne and Major Bates. The list of the latter (*Gazetteer*, p. 2) is the fullest and also indicates the division of the Pargaṇas between Marāz and Kamrāz as shown in the table.

The arrangement of the Pargaṇa names conforms to the topographical order followed in Chapter IV. of this Memoir. The second column gives the Pargaṇa names according to their present Kaśmīrī pronunciation, without regard to the often curiously distorted forms in which these names are presented by the earlier lists. The third column shows the authorities in whose lists each particular name is found. In the fourth column the Sanskrit name of the district has been indicated, whenever known, together with the text in which it first occurs. In the last column references have been given to the paragraphs of the Memoir specially dealing with the historical topography of the several districts.

Besides the Pargaṇas shown in the table, Abū-l-Faẓl counts with Kaśmīr the Pargaṇas of '*Maru Aḍwin*' (Maḍivāḍvan), '*Banihāl*' (Bān^{a}hāl), and '*Dachhin Khāwarah*' (*i.e.*, Dachūn-Khōvur, the valley on both banks of the Vitastā below Bārāmūla). In the same way Moorcroft adds the Pargaṇas of '*Durbid*' (*i.e.*, Dvārbidī in the Vitastā Valley, comp. § 53), '*Karnao*' and '*Tahirabad*'; of the position of the last-named tract I am not certain.

[The list of Kaśmīr Pargaṇas given by P. Joseph Tieffenthaler, *Description de l'Inde*, p. 77, is only a defective reproduction of Abū-l-Faẓl's list. Ritter, *Asien*, ii. pp. 1136 *sq.*, has endeavoured to elucidate

Tieffenthaler's queer names with whatever materials were then available].

List of Abbreviations.

AF.	Abū-l-Faẓl, *Āin-i Akb.*, ii. pp. 368–371.
Mo.	Moorcroft, *Travels*, ii. p. 113.
Hü.	Von Hügel, *Kaschmir*, ii. 206 *sq.*
Vi.	Vigne, *Travels*, i. p. 272.
Ba.	Bates, *Gazetteer*, p. 2.

Serial No.	Modern name.	Shown in Pargaṇa list of	Sanskrit name.	Remarks and References.
		Pargaṇas of Marāz (Maḍavarājya).		
1	Phākh ...	AF. Mo. Hü. Vi. Ba.	Phākhuvā (Śriv.) ...	§ 101.
2	Atshan ...	Mo. Hü. Ba.	.....	These small districts, formed apparently during the Sikh administration, comprised groups of villages in the immediate vicinity of Śrīnagar, to the west, south and north, respectively.
3	Balada ...	Mo. Hü. Ba.	.....	
4	Ārvai ...	Ba.	.....	
5	Vihī	AF. Mo. Hü. Vi. Ba.	Khaṇḍvī (Rāj.) ...	§ 105.
6	Vular ...	AF. Mo. Hü. Vi. Ba.	Holaḍā (Rāj.) ...	§ 106.
7	Dachūnpōr ..	AF. Mo. Hü. Vi. Ba.	Dakṣiṇapāra (Śriv.)	§ 107.
8	Khōvurpōr ...	AF. Mo. Hü. Vi. Ba.	Vāmapārśva (Jonar.)	§ 110.
9	Maṭan ...	AF. Mo. Hü. Vi. Ba.	Mārtāṇḍa (Jonar.)	§ 111.
10	Anyech (Anatnāg)	AF. Mo. Hü. Vi. Ba.	.....	§ 112. Also called Islāmābād (Mo. Hü). Anyech appears in AF. misspelt as Itch.
11	Kuṭ^{s}hār ...	AF. Mo. Hü. Vi. Ba.	[Kapaṭeśvara, Rāj.]	§ 112. Skr. name found only as that of Tirtha.

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Serial No.	Modern name.	Shown in Pargaṇa list of	Sanskrit name.	Remarks and References.
12	Bring ...	AF. Mo. Hü. Vi. Ba.	*Bhṛṅga (Lokapr.)	§ 113.
13	Shāhābād (Vēr) ...	AF. Mo. Hü. Vi. Ba.	.....	§ 114. Mo. calls the Pargaṇa "Bannahal."
14	Divᵃsar ...	AF. Mo. Hü. Vi. Ba.	Devasarasa ...	§ 115.
15	Āḍᵃvin ...	AF. Mo. Hü. Vi. Ba.	Karāla (Rāj.) ... Ardhavana (Jonar.)	§ 116.
16	Zainᵃpōr ...	AF. Mo. Hü. Vi. Ba.	Jainapura (Jonar.)...	do.
17	Bōṭ	AF. Mo. Hü. Vi. Ba.	.....	§ 116. Hü. Vi. call the district after "S'upiyan Shahr," its headquarters.
18	Sūparsāmün ...	AF. Mo. Hü. Vi. Ba.	.....	§ 117.
19	S'ukru ...	AF. Mo. Hü. Vi. Ba.	.....	do.
20	Sāvur ...	Hü. Vi. Ba.	.....	§ 118.
21	Chrāṭh ...	Vi. Ba. ...	.....	do.
22	Sāiru-l-mawāẓi' Bālā.	AF. Mo. Hü Vi. Ba.	.....	do.
23	Nāgām ...	AF. Mo Hü. Vi. Ba.	Nāgrāma (Jonar.)	§ 119.
24	Yech ...	AF. Mo. Hü. Vi. Ba.	Ikṣikā (S'rīv.) ...	do.

Pargaṇas of Kamrāz (Kramarājya.)

25	Dūnts ...	AF. Mo. Hü. Vi. Ba.	*Dvāviṁśati (Lokapr.)	§ 120.
26	Bīru ...	AF. Mo. Hü. Ba.	Bahurūpa (Jonar.)	do.
27	Māñchᵃhōm ...	Mo. Hü. Vi Ba.	Mākṣāśrama (S'rīv.)	do.
28	Parᵃspōr ...	AF. Mo. Hü Ba.	Parihāsapura (Rāj.)	§ 121.

Serial No.	Modern name.	Shown in Pargaṇa list of	Sanskrit name.	Remarks and References.
29	Sāiru-l-mawāẓi' Pāyīn.	AF. Mo. Hü. Vi. Ba.	.....	§ 122.
30	Andᵊrkōṭh ...	AF. Mo. ...	[Abhyantarakoṭṭa] (Rāj.)	do.
31	Bāngil ...	AF. Mo. Hü. Vi. Ba.	Bhāṅgila (Rāj.) ...	§ 123.
32	Paṭan ...	AF. ...	Pattana (Rāj.) ...	do.
33	Tilᵃgām ...	AF. Mo. Vi. Ba.	Tailagrāma (Fourth Chron.)	do.
34	Khuy ...	AF. Mo. Hü. Ba.	.....	A small tract ('Quibi' on map) to the north of Paṭan and Tilᵃgām.
35	Kruhin ...	AF. Mo. Hü. Ba.	*Krodhana (Lokapr.)	§ 124.
36	Hamal ...	Mo. Vi. Ba.	S'amālā (Rāj.) ...	§ 125.
37	Maḥchᵢpūr ...	Mo. Vi. Ba.	.....	do.
38	Uttara ...	Vi. Ba. ...	Uttara (Rāj.) ...	§ 126.
39	Lōlau ...	Mo. Hü. Vi. Ba.	Laulāha (Rāj.) ...	§ 128.
40	Zainᵊgīr ...	AF. Mo. Hü. Vi. Ba.	Jainagiri (Jonar.)	do.
41	Khuyᵊhōm ...	AF. Mo. Hü. Vi. Ba.	Khūyāśrama (Rāj.)	do.
42	Lār	Mo. Hü. Ba.	Lahara (Rāj.) ...	§ 129.

Additional Note.—§ 14.

Mr. W. Merk, C.S.I., C.S., at present Deputy Commissioner of the Hazāra District, to whom I submitted the above-printed remarks on Albērūnī's route to Kaśmīr (p. 23) and on the town of *Babrahān* mentioned by him, has kindly supplied me in a letter, dated 25th April, 1899, with the interesting information that "the basin formed by the three Nullahs which unite at *Chamhad* is called the '*Babarhān*' tract." Chamhad is shown on the map as a village in the Mian Khaki Nullah, south-west of Abbottabad, circ. 34° 7′ lat., 73° 7′ long.

Mr. Merk believes that the position of Albērūnī's "town *Babrahān*, half-way between the rivers Sindh and Jailam" is marked by the present 'Babarhān' which practically retains the same name. There is much to support this identification. The Nullah called Mian Khaki on the Survey map forms a convenient route from the central plain of Hazāra, about Mīrpur, towards the Siran Valley through which the Indus could conveniently be gained at Torbela. The latter has remained a favourite crossing place to the present day, being situated just where the Indus debouches from the mountains.

The 8 *Farsakh* or about 39 miles which Albērūnī counts from Babrahān to "the bridge over the river," *i.e.*, according to my explanation, the present Muẓaffarābād, would well agree with the actual distance between the latter place and Babarhān. In calculating this distance it must be kept in view that the old road from the Indus to Kaśmīr, according to Mr. Merk's information, descended to Garhi Habībullā, on the Kunhār River, through the Doga Nullah, *i.e.*, by a more direct route than that followed by the modern cart-road *viâ* Mansahra.

I am further indebted to Mr. Merk for the very interesting notice that the plain near Mīrpur, about 5 miles north-northwest of Abbottabad, is popularly known by the name of *Urash* or *Orash*. There can be no doubt as to this local name being the modern representative of the ancient *Uraśā*. Its survival in that particular locality strikingly confirms the conclusion indicated above in § 83, and also in my note on Rājat. v. 217, as to the position of the old capital of Uraśā. The designation of this capital was undoubtedly *Uraśā*.

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SUPPLEMENTARY NOTE *BB*: The lists of Kaśmīr Pargaṇas ... 218

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LIST OF ABBREVIATIONS.

Āin-i Akb.	The Āin-i Akbarī by Abū-l-Faẓl 'Allāmī, translated from the original Persian, by Col. H. S. Jarrett. Vol. II. (Bibliotheca Indica). Calcutta, 1891.
Bates, *Gazetteer.*	A Gazetteer of Kashmir and the adjacent districts of Kishtwar, Badrawar, etc., compiled (for political and military reference), by Charles Ellison Bates, Captain, B.S.C., and Brevet-Major. Calcutta. 1873.
Bernier, *Travels.*	Travels in the Mogul Empire A.D. 1656–1668, by François Bernier, M.D. A revised and improved edition, etc., by Archibald Constable. Westminster, Archibald Constable and Co., 1891.
Bühler, *Report.*	Detailed Report of a tour in search of Sanskrit MSS. made in Kaśmīr, Rajputana and Central India. By G. Bühler. Journal of the Bombay Branch of the Royal Asiatic Society, 1877.
Cole, *Anc. Buildings.*	Illustrations of Ancient Buildings in Kashmir. Prepared under the authority of the Secretary of State for India. By Henry Hardy Cole, R.E., Superintendent, Archæological Survey of India, N.-W. P. London, 1869.
Cunningham, *Anc. Geogr.*	The Ancient Geography of India, I. The Buddhist period, including the campaigns of Alexander and the Travels of Hwen-Thsang. By Alexander Cunningham, Major-General, R.E. London, 1871.
Drew, *Jummoo.*	The Jammoo and Kashmir Territories. A Geographical Account. By Frederic Drew, F.R.G.S. London, 1875.
Forster, *Journey.*	A Journey from Bengal to England, through the Northern part of India, Kashmire, etc. By George Forster. Vols. I, II. London, 1808.
Fourth Chron.	Rājāvalīpatāka of Prājyabhaṭṭa and Śuka. [Fourth Sanskrit Chronicle of Kaśmīr. Quoted according to the editio princeps, Calcutta, 1835; compare below, p. 41].
Haracar.	The Haracaritacintāmaṇi of Rājānaka Jayadratha. Kāvya-mālā, Bombay, 1897 [compare below, p. 48].

HÜGEL, *Kaschmir.* Kaschmir und das Reich der Sick. Von Carl Freiherrn von Hügel. Vols. I.–IV. Stuttgart, 1840.

India. Alberūnī's India. An account of the religion, philosophy, literature, geography, etc., of India about A.D. 1030. An English edition, by Dr. E. C. Sachau. Vols. I., II. London, 1888.

Jonar. The Rājataraṅgiṇī of Jonarāja. [Compare below, p. 41. Quoted according to Calcutta edition, 1835, except for additional verses found in Prof. Peterson's edition, Bombay Sanskrit Series, 1896].

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LAWRENCE, *Valley.* The Valley of Kashmir, by Walter R. Lawrence, I.C.S., C.I.E., Settlement Commissioner, Kashmir and Jammu State. London, 1895.

Life. The Life of Hiuen-Tsiang. By the Shamans Hwui Li and Yen-Tsung. With a Preface, etc., by Samuel Beal. London, 1888.

Māh. Māhātmya [compare below, p. 49. The several texts are quoted from MSS.].

MOORCROFT, *Travels.* Travels in the Himalayan Provinces of Hindustan and the Panjab; in Ladakh and Kashmir; etc., by Mr. William Moorcroft and Mr. George Trebeck, from 1819 to 1825. Prepared for the press by Horace Hayman Wilson. Vols. I, II. London, 1841.

Nilamata. The Nīlamatapurāṇa. [Compare below, p. 46. Quoted from MSS.].

Rājatar. Kalhaṇa's Rājataraṅgiṇī, or Chronicle of the Kings of Kashmir. Edited by M. A. Stein. Sanskrit Text with critical notes. Education Society's Press, Bombay, 1892. [Notes quoted will be found in my annotated translation of the Chronicle, in course of publication by Messrs. A. Constable & Co., London].

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Samayam. The Samayamātṛkā of Kṣemendra. Kāvyamālā, Bombay, 1888. [Compare below, p. 44].

Si-yu-ki. Si-yu-ki. Buddhist records of the Western World. Translated from the Chinese of Hiuen Tsiang, by Samuel Beal. Vols. I, II. London, 1884.

Śrikaṇṭhac. The Śrīkaṇṭhacarita of Maṅkha. Kāvyamālā, Bombay, 1887.

Śrīv. The Jaina-Rājataraṅgiṇī of Śrīvara. [Compare below, p. 42. Quoted according to the editio princeps, Calcutta, 1835].

STEIN, *Notes on Ou-k'ong.* Notes on Ou-k'ong's account of Kaçmīr. By M. A. Stein. Proceedings of the Imperial Academy of Sciences, Vienna, 1896.

STEIN, *Notes on the Pir Pantsāl.* Notes on the ancient topography of the Pīr Pantsāl Route. By M. A. Stein. Journal of the Asiatic Society, Bengal. Calcutta, 1895.

Tārīkh-i Rashīdi. The Tārīkh-i Rashīdī of Mirzā Muḥammad Ḥaidar. An English version, edited with commentary, etc., by N. Elias; the translation by E. Denison Ross. London, 1895.

TROYER.	Râdjatarangiṇî. Histoire des Rois du Kachmîr, traduite et commentée par M. A. Troyer. Vols. I–III. Paris, 1840–52.
VIGNE, *Travels.*	Travels in Kashmir, Ladak, etc. By G. T. Vigne, Esq. Vols. I, II. London, 1842.
Vikram.	The Vikramâṅkadevacharita. Life of King Vikramāditya of Kalyāṇa, composed by his Vidyāpati Bilhaṇa. Edited, with an Introduction, by Dr. G. Bühler. Bombay, 1875.
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NOTE.

The transcription of Sanskrit, Persian and Arabic words in the present Memoir conforms to the system approved by the International Oriental Congress of 1894. In the phonetic rendering of Kaśmiri words the lines adopted by Dr. G. A. Grierson, in his analysis of Paṇḍit Îśvara Kaula's Kaśmîrî Grammar (*J. A. S. B.*, 1897-98) have been closely followed.

CORRIGENDA.

Page.	Line.				
10	7	For	*expect*	read	*except.*
40	27	,,	*-bṛāṛ*	,,	*-brāṛ.*
55	35	,,	*Rāṣhidī*	,,	*Raṣhīdī.*
88	1	,,	NORTHERN	,,	NORTHERN AND EASTERN.
93	21	,,	*Rāṣhidī*	,,	*Raṣhīdī.*
98	29	,,	*Nāṛ*[u]	,,	*Nāṛu.*
103	14	,,	Vastarvan	,,	Vast[a]rvan.
103	17	,,	Rāmuṣa	,,	Rāmuṣ.
104	17	,,	*Bhattāra*°	,,	*Rhaṭṭāra*°.
105	21	,,	*Sureśvari*	,,	*Sureśvari.*
110	2	,,	*larger-*	,,	*large.*
123	1	Add heading: SECTION VIII.—ETHNOGRAPHY.			
126	6	For	*Karnāv*	read	*Karnau.*
155	36	,,	*Rāṇi*	,,	*Rāṇ*[i].
206	18	,,	*latter*	,,	*former.*

JOURNAL

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ASIATIC SOCIETY OF BENGAL.

Vol. LXVIII. Part II.—NATURAL SCIENCE.

No. I.—1899.

Materials for a Carcinological Fauna of India. No. 4. The Brachyura Cyclometopa. Part II. *A Revision of the Cyclometopa with an Account of the Families Portunidæ, Cancridæ and Corystidæ.*

By A. Alcock, M.B., C.M.Z.S., *Superintendent of the Indian Museum.*

[Received 16th March. Read 5th April, 1899.]

In correction of my previously expressed opinion (*Journal* 1898, Vol. LXVII, pt. II, pp. 68 and 69) I now have no hesitation in accepting the limits of the Cyclometopa that have been fixed by Miers in *Challenger Brachyura*, pp. 106–215. I am not, however, in agreement with Miers subdivision of this great group.

It seems to me that Ortmann (Zool. Jahrb., Syst., &c., VII, 1893-94 and IX, 1895–97) has struck out a much more natural classification of the Cyclometopa; but as he includes the *Parthenopidæ* and excludes the *Corystidæ*, I am unable to adopt it in its entirety. There can be little doubt, however, that Ortmann's conceptions of *Xanthini* and *Cancrini* agree with nature.

The present paper contains (1) a statement of my own views as to the classification of the Cyclometopa, and (2) diagnoses of the Indian genera and species of three of the constituent families, namely, the *Portunidæ*, the *Cancridæ* and the *Corystidæ*.

The Indian species of Portunidæ, as far as I know, number 67 or 68, of which 65 are represented in the Indian Museum: of Cancridæ 4, all of which are in the Indian Museum: of Corystidæ only one—a new species of *Nautilocorystes* dredged by the R. I. M. S. "Investigator."

Tribe CYCLOMETOPA, or CANCROIDEA.

Cyclomdtopes, Telphusiens and *Corystiens*, Milne Edwards, Hist. Nat. Crust. I, 264 and 363, II. 7 and II. 139.

Cancroidea and *Corystoidea*, Dana, U. S. Expl. Exped., Crust. pt. I, pp. 142 and 296.

Cyclomdtopes and *Corysticns*. A. Milne Edwards, Ann. Sci. Nat. Zool. (4) XIV, 1860, p. 185.

Cyclometopa or *Cancroidea*, Miers, Challenger Brachyura, pp. 106–215.

Maioidea-corystoidea, pp. 26 and 28; *Cancroidea-portuninea*, pp. 27 and 65; and *Cancroidea-cyclometopa* (*Cancrini* and *Xanthini* only), pp. 412, 421, 428: Ortmann, Zool. Jahrb., Syst., etc., VII, 1893-94.

Oxyrhyncha-corystidæ and *Cyclometopa* or *Cancroidea* Ortmann, in Bronn's Thier-Reich V. ii. Arthropoda, pp. 1166 and 1165.

Carapace variable, either broader than long (almost all *Telphusidæ Xanthidæ* and *Portunidæ*, and some *Cancridæ*) or longer than broad (*Corystidæ* and most *Cancridæ*), the antero-lateral borders generally arched, sometimes very strongly so, the postero-lateral borders generally convergent, sometimes very strongly so. Front broadish or broad, horizontal or obliquely deflexed, occasionally prominent (but never forming a pointed rostrum with the basal antenna-joints for pillars as in the *Oxyrhyncha*).

Buccal orifice square-cut—only in the *Corystidæ* may its anterior angles be rounded off and a little convergent and its anterior boundary be indefinite: palp of external maxillipeds almost always articulating with the antero-internal angle of the merus.

Epistome transverse, never long fore and aft, sometimes linear and sunken (not distinguishable in the *Corystidæ*).

Antennules folding either nearly transversely or longitudinally.

Branchiæ nine on either side, their efferent channels opening on either side of the palate.

The abdomen of the male occupies all the space between the last pair of legs.

The genital ducts of the male open on the bases of the last pair of legs.

The Cyclometopa may be divided into the following 5 families:—

Family I. TELPHUSIDÆ. Carapace usually transverse, broader than long, subquadrilateral or oblate-oval, the antero-lateral borders short, the regions not well delimited (although the cervical suture may be deep and conspicuous) and never areolated. Front broad, not separated from the inner supra-orbital angles, obliquely deflexed (occasionally horizontal), commonly entire (occasionally lobed).

The antennules fold transversely in narrow fossæ.

The antennal flagella short.

Epistome of fair length fore and aft, well demarcated and never encroached upon by the external maxillipeds.

Buccal orifice quadrate, a little elongate and a little bit rounded and contracted at the anterior angles.

Legs gressorial.

Sternum broad.

The Telphusidæ are the highest Cyclometopes, and approach the *Catometopa*. They appear to me, from consideration both of structure and of habitat, to have branched off from the Oziine or Eriphiine stocks, but are now inhabitants of fresh-water or damp jungle.

I do not propose to treat this family further, in this series of papers, until I have finished the other Brachyura.

Family II. Xanthidæ. Carapace transversely oval, or transversely hexagonal, or subquadrilateral, or (rarely) subcircular, but almost always broader than long; the regions very often, but by no means always, well defined and multi-areolate. Front broadish or very broad, oftener than not it is *not* sharply separated from the supra-orbital angles, often obliquely deflexed, usually showing a division into two lobes (each of which may, in some cases, show a further subdivision into two lobules).

The antennules fold either quite transversely or obliquely transversely.

Antennal flagella short or slender.

Epistome of fair length fore and aft, well demarcated, not encroached on by the external maxillipeds.

Buccal orifice quadrate, commonly broader than long.

Legs gressorial.

Sternum moderately broad—much narrower than in the *Telphusidæ*.

I have already in this *Journal*, Vol. LXVII, part 2, 1898, pp. 69–233, dealt with the family *Xanthidæ* in detail.

The family is there divided into the following 7 sub-families :—

Sub-family	I.	*Xanthinæ*,	loc. cit. p.	77.
,,	II.	*Actæinæ*	,, p.	137.
,,	III.	*Chlorodinæ*	,, p.	156.
,,	IV.	*Menippinæ*	,, p.	177.
,,	V.	*Oziinæ*	,, p.	181.
,,	VI.	*Pilumninæ*	,, p.	190.
,,	VII.	*Eriphiinæ*	,, p.	213.

In the *Oziinæ* and *Eriphiinæ* this family approaches the *Telphusidæ*: by the *Pilumninæ* and *Xanthinæ* it is linked with the section *Carcininæ* of the *Portunidæ* and, through these, with the *Cancridæ*.

Family III. Portunidæ. Carapace transversely hexagonal, sometimes subquadrate, occasionally elongate-obovate or even subcircular, but generally broader (typically much broader) than long, the regions often not well defined and seldom areolated. Front remarkably broad, generally well separated from the supra-orbital angles and almost always cut into teeth or lobes which are from two to six in number exclusive of the supra-orbital angles.

The antennules fold transversely or obliquely transversely.

The antennal flagella are almost always long and slender.

The epistome may be of fair length fore and aft, or may be linear: it may be, but is not usually, encroached upon by the external maxillipeds.

Buccal orifice quadrate, well defined anteriorly, usually, but by no means always, broader than long.

The last pair of legs are (with a few exceptions in which their dactylus is hook-like or is merely lanceolate) peculiarly modified for swimming, having at least the last two joints compressed, broadly-foliaceous, and paddle-like.

Sternum broad.

This family is here divided into 4 sub-families, namely:—

Sub-family	I.	*Carcininæ*	see ahead	pp. 6, 7.
,,	II.	*Portuninæ*	,,	pp. 6, 7.
,,	III.	*Caphyrinæ*	,,	pp. 6, 8.
,,	IV.	*Lupinæ*	,,	pp. 6, 8.

The *Carcininæ*, by way of *Carcinus*, approach the *Xanthidæ*, by way of *Hoploxanthus*.

Family IV. Cancridæ. Carapace either transversely oval (*Cancrinæ*) or, more commonly, elongate-oval or subcircular, the regions rarely strongly delimited and areolate. Front not very broad, very often cut into 3 (sometimes 2 or 4) sharp teeth, sometimes rather prominent.

The antennules fold longitudinally.

Antennal flagella usually long, coarse, and setaceous.

Epistome usually of fair length, often sunken, always overlapped, more or less, by the external maxillipeds, which are commonly, though not always, elongate. Buccal orifice quadrate, commonly a little elongate.

Legs gressorial.

Sternum narrow.

The family is here divided into 6 sub-families :—

Sub-family	I.	*Cancrinæ*	see ahead	p. 95.
,,	II.	*Pirimelinæ*	,,	p. 95.
,,	III.	*Thiinæ*	,,	p. 96.
,,	IV.	*Atelecyclinæ*	,,	p. 96.
,,	V.	*Acanthocyclinæ*	,,	p. 96.
[? Subfamily	VI.	*Trichiinæ*	,,	p. 96.]

In the *Pirimilinæ* and *Thiinæ* this family approaches the *Carcininæ* among the *Portunidæ*; and by the *Atelecyclinæ* it is allied to the *Corystidæ*.

Family V. CORYSTIDÆ. Carapace a good deal longer than broad, elongate-oval, the regions fairly well defined or not, not areolated. Front rather prominent, not very broad, cut into 2 or 3 teeth.

The antennules are small and fold longitudinally.

The antennal flagella, when present, are long—sometimes longer than the carapace—coarse, and setaceous.

There is no epistome, and the maxillipeds, which occasionally have a pediform cast, are elongate and extend almost up to the antennules.

Buccal cavern rather elongate, its sides slightly convergent quite at their anterior end.

Legs either gressorial, or the last pair modified for swimming.

Sternum narrow and elongate.

In some of the genera of this group the antennal flagella are as long as the carapace and the dactyli of the legs are almost styliform: in others the dactyli are lanceolate—the last pair broadly so—and the antennal flagella are not more than half as long as the carapace.

The *Corystidæ* are the lowest *Cyclometopa* and have much the same relative position to the higher families of Cyclometopes as the *Raninidæ* have to the higher families of Oxystomes.

Family PORTUNIDÆ.

Portuniens, Milne Edwards, Hist. Nat. Crust. I. 432: A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV. 1860, p. 195; and Archiv. du Mus. X. 1861, p. 310.

Portunidæ and *Platyonychidæ*, Dana, U. S. Expl. Exp. Crust. pt. I. pp. 267, 290.

Portunidæ, Miers, Challenger Brachyura, p. 169.

Portuninea, Ortmann, Zool. Jahrb., Syst., VII. 1893, p. 65.

Carapace depressed, or little convex (strongly convex in *Sphærocarcinus*), hexagonal, sometimes subquadrate, occasionally elongate-obovate or even subcircular, but generally broader (typically much broader) than long; the regions most often not well defined, seldom areolated;

the antero-lateral borders cut into teeth which are from 5 (very rarely 4) to 9 in number (in *Podophthalmus* and some species of *Euphylax*, in which the antero-lateral borders are excavated for the enormously prolonged orbits, the number of teeth is reduced further).

Front remarkably broad, generally well separated from the supra-orbital angles, almost always cut into teeth or lobes, which are from 2 to 6 in number exclusive of the supra-orbital angles.

The antennules fold transversely or obliquely transversely.

Antennal flagella almost always long and slender.

The epistome may be of fair length fore and aft, or may be linear and sunken, but the palate is well defined anteriorly.

Buccal cavern quadrate, commonly broader than long, the merus of the external maxillipeds never decidedly elongate.

The last pair of legs are, with few exceptions, modified for swimming, having at least the last two joints compressed, greatly broadened, and paddle-like. (In *Caphyra* and *Sphærocarcinus* the last pair of legs are much like the other three pairs, are subdorsal, and end in a hook-like dactylus. In *Carcinus*, *Nectocarcinus* and *Portumnus* the dactylus of the last pair of legs is merely lanceolate).

I would propose to divide the Portunidæ into four sub-families:—

1. Sub-family *Lupinæ*. The chelipeds are longer, usually much longer, than any of the legs, the first three pair of which have a tendency to be slender and the last pair of which end in typical swimming-paddles: the antero-lateral borders of the carapace are cut into from 5 (very rarely 4) to 9 distinct teeth. The carapace *may* be subrotund, but it is usually conspicuously broad.

2. Sub-family *Caphyrinæ*. The chelipeds and legs are short, but the chelipeds are distinctly, if only slightly, longer than the legs. The carapace is either as long as broad or very little broader than long, and is either smooth or is traversed on either side by a single ridge running inwards from the last of the (4 or) 5 teeth or puckers into which the antero-lateral border is divided. The last pair of legs are either swimming-paddles or are subdorsal and end in a prehensile dactylus.

3. Sub-family *Portuninæ*. The legs often have a tendency to be stout, and at least one pair of them is at least as long as the chelipeds: the last pair are typical swimming-paddles. The carapace is seldom very broad and its antero-lateral borders are cut into 5 teeth. The basal antenna-joint may be either fixed or movable: it is seldom broader than long, often longer than broad, and lies almost in the longitudinal axis of the carapace.

4. Sub-family *Carcininæ*. The legs have a tendency to be stout, and at least one pair of them is at least as long as the chelipeds: the

last pair end in a lanceolate dactylus and otherwise do not differ much from the other three pairs. Carapace not at all broad, its antero-lateral borders cut into 4 or 5 teeth. The basal antenna-joint is fixed: it is longer than broad and lies in the longitudinal axis of the carapace.

Sub-family I. Carcininæ.

This sub-family comes nearest to the other Cancroid families. Of its constituent genera *Carcinus* touches the Cancridæ and Xanthidæ, *Nectocarcinus* touches the Xanthidæ, and *Portumnus* touches the Corystidæ.

It may be divided into two Alliances :—

Alliance 1. *Portumnoida.* Carapace as long as broad: antennæ setaceous: crests of endostome ? For the single genus.

Portumnus, Leach, Malac. Pod. Brit. text of pl. iv. (=*Xaiva*, Macleay in Smith's Ill. Annulosa S. Africa, p. 62).

Alliance 2. *Carcinoida.* Carapace broader than long: antennæ not setaceous, the basal antenna-joint fixed: the palatal crests defining the efferent branchial channels are either interrupted or completely wanting. Constituent genera :—

1. *Carcinus, Leach.

2. **Nectocarcinus.* A. Milne Edwards, Ann. Sci. Nat. Zool. (4) XIV. 1860, pp. 220, 228; and Archiv. du Mus. X. 1861, p. 404.

Sub-family II. Portuninæ.

The material at my disposal is not sufficient to enable me with any confidence to separate the genera of this sub-family into groups, so that the following classification is meant to be merely a suggestion.

Alliance 1. *Portunoida*: The last pair of legs are typical swimming-paddles: the basal antenna-joint may be either fixed or movable: the palatal crests defining the efferent branchial channels may either be distinct and complete or be wanting. Constituent genera :—

1. *Bathynectes*, Stimpson, Bull. Mus. Comp. Zool. II. 1870-71, p. 145 (=*Thranites*, Bovallius, Ofversigt Kongl. Vetensk.-Ak. Forhandl. 1876, No. 9, p. 61).

2. *Benthochascon, Alcock.

3. **Liocarcinus*, Stimpson, Bull. Mus. Comp. Zool. II. 1870-71, p. 146 (footnote).

4. **Ovalipes*, M. J. Rathbun, Proc. U. S. Nat. Mus. XXI. 1898, p. 597 (for *Platyonychus* as restricted by Miers, Challenger Brachyura, p. 201; = *Anisopus* DeHaan Faun. Japon. Crust. p. 12).

5. *Parathranites, Miers, Alcock.

6. *Polybius*, Leach, Malac. Pod. Brit. text of pl. ix. B: and Milne Edwards, Hist. Nat. Crust. I. 438.

7. **Portunus*, Fabr.: Milne Edwards, Hist. Nat. Crust. I. 439.

Alliance 2. *Cœnophthalmoida*. As *Portunoida*, but the inner infra-orbital angle is fused with the inner supra-orbital angle. For the single genus.

Cœnophthalmus, A. Milne Edwards, Miss. Sci. Mex. Crust. p. 237.

Sub-family III. Caphyrinæ.

The genus *Lissocarcinus* connects this sub-family, by means of *Thalamonyx*, with the Lupinæ. *Caphyra* is another link with the Lupinæ, and *Sphærocarcinus* connects *Lissocarcinus* and *Caphyra*.

The three constituent genera are as follows, and, in my opinion, each genus is equivalent to an "alliance" in the other sub-families:—

1. *Lissocarcinus, Adams and White. The basal antenna-joint has its antero-external angle produced to touch the front and occlude the orbital hiatus—much as in *Charybdis* (=*Goniosoma*): the last pair of legs are swimming paddles.

2. *Sphærocarcinus*, Zehntner, Rev. Suisse Zool., Ann. Mus. d' Hist. Nat. Genève, II. 1894, p. 163. As *Lissocarcinus*, but the last pair of legs are as in *Caphyra*, and the carapace is *very strongly convex*.

3. *Caphyra, Guérin, Ann. Sci. Nat. XXV. 1832, pp. 285, 286 (=*Camptonyx*, Heller SB. Ak. Wien, XLIII. 1861, i. p. 357). The last pair of legs are subdorsal in position, are almost similar to the other legs and end in a hook-like dactylus. The basal antenna-joint is as in *Charybdis* (=*Goniosoma*).

Sub-family IV. Lupinæ.

The genera of this sub-family fall into the 3 following alliances:—

Alliance 1. *Lupoida*. The basal antenna-joint is short and squat and decidedly broader than long; or it has its greatest diameter transverse, or obliquely transverse, owing to the extension of its antero-external angle towards or into the orbit or up to the front.

The chelipeds are usually very much longer than the legs, of which the first 3 pairs have a tendency to be slender and the fourth pair usually has the last four joints much broadened.

The carapace is usually decidedly transverse with the antero-lateral borders longer than the postero-lateral, and is very often crossed by a few long definitely-placed transverse ridges, of which one that arches inwards from the last tooth or spine of the antero-lateral border on either side is the most constant.

The genera that constitute this Alliance are the following:—

1. *Charybdis, De Haan (or Goniosoma, A. Milne Edwards) with subgenera *Gonioneptunus Ortmann and *Goniohellenus (*nov.*).

2. *Cronius*, Stimpson, Ann. Lyc. Nat. Hist. New York, VII. 1860, p. 225 (*Charybdella*, M. J. Rathbun, Proc. Biol. Soc. Washington, XI. 1897, p. 166).

3. *Lupa*, De Haan, Faun. Japon. Crust. p. 11: A. Milne Edwards, Archiv. du Mus. X. 1861, p. 351 (*Lupella*, M. J. Rathbun, *tom. cit.* p. 155).

4. *Neptunus, De Haan (Portunus, M. J. Rathbun, *tom. cit.* p. 155, *nec auctorum*) with sub-genera *Achelous, *Amphitrite, **Callinectes*, *Hellenus (including *Xiphonectes) and *Lupocycloporus (*nov.*).

5. *Scylla, De Haan.

6. *Thalamita, Latreille: with sub-genus *Thalamitoides* A. Milne Edwards, Nouv. Archiv. du Mus. V. 1869, p. 146.

7. *Thalamonyx, A. Milne Edwards.

[8. *Hedrophthalmus*, Nauck, Zeits. Wiss. Zool. XXXIV. 1880, p. 67].

Alliance 2. *Podophthalmoida.* As Lupoida, but the eyes are borne on basal stalks of enormous length and the orbits are continued along the whole of the antero-lateral borders of the carapace.

The genera that constitute this Alliance are:—

1. *Podophthalmus, Lamarck.

2. *Euphylax*, Stimpson, Ann. Lyc. Nat. Hist. New York, VII. 1862, p. 225.

Alliance 3. *Lupocycloida.* The basal antenna-joint, though not long, is rather slender and does not lie transversely or have its antero-external angle produced to any extent.

The chelipeds are considerably, sometimes very much, longer than any of the legs, of which the first three pairs are slender.

In the fourth pair of legs the last two joints are much broadened, but the merus and carpus *may be* slender.

The carapace is of no very remarkable breadth, the antero-lateral borders are about as long as the postero-lateral, and at least one transverse ridge is present on either side.

Two genera enter into this Alliance, namely,

1. *Carupa, Dana (in which the merus and carpus of the last pair of legs are not broadened).

2. *Lupocyclus, Adams and White (in which the merus and carpus of the last pair of legs may either be broadened or not).

In the preceding scheme of classification the Indian genera are printed in Roman type and the genera known to me by autopsy are marked with an asterisk.

Key to the Indian genera of the Sub-families Carcininæ and Portuninæ.

A. Propodite of the last pair of legs merely dilated, the dactylus lanceolate..... CARCINUS.
B. Propodite of the last pair of legs typically foliaceous and paddle-like:—
  1. Carapace smooth; orbits with two very indistinct grooves in the upper margin: arm short, without spines: legs stout..... BENTHOPHASCON.
  2. Carapace with definitely-disposed tubercles; orbits with two open fissures in the upper wall: arm longish, with a spine or spines: legs slender..... PARATHRANITES.

Key to the Indian representatives of the Sub-family Caphyrinæ.

Chelipeds and legs short: carapace as long as broad or not much broader than long, smooth or with a single transverse ridge on either side: eyes and orbits normal: fronto-orbital border very much less than the greatest width of the carapace: antero-external angle of basal antenna-joint produced to meet the front and fill the orbital hiatus to the exclusion of the flagellum: front cut into two broad lobes besides the inner supra-orbital angles, or subentire..... LISSOCARCINUS.

Key to the Indian Genera of the Sub-family Lupinæ.

I. The eyes, eyestalks, and orbits are normal in size and position:—
  A. The extent of the fronto-orbital border is decidedly less, and is commonly *very* much less than the greatest breadth of the carapace, so that the antero-lateral borders are oblique and more or less arched. The antennal flagellum is near the orbital hiatus and sometimes in it:—
    1. The antero-external angle of the basal antenna-joint not appreciably produced, the flagellum standing in the orbital hiatus:—
      i. Carapace very decidedly broader than long, its antero-lateral borders cut into seven rather irregular teeth..... CARUPA.
      ii. Carapace little broader than long, its antero-lateral borders cut into nine teeth which are alternately large and small (the small teeth sometimes obsolescent) .. LUPOCYCLUS.

2. The prolongation of the antero-external angle of the basal antenna-joint is small and lies in the orbit, the flagellum standing in the orbital hiatus: antero-lateral borders of carapace cut into nine large teeth:—
   - i. Hand inflated and almost smooth: surface of carapace smooth and unbroken... — SCYLLA.
   - ii. Hand prismatic and costate: surface of carapace almost always in some way broken..... — NEPTUNUS.

3. The prolongation of the antero-external angle of the basal antenna-joint is large and fills up either all or the greater part of the orbital hiatus:—
   - i. The prolongation of the basal antenna-joint does not reach the front, so that the flagellum stands in the upper part of the orbital hiatus: other characters as in *Charybdis*..... — GONIONEPTUNUS.
   - ii. The prolongation of the basal antenna-joint fills up all the orbital hiatus to the complete exclusion of the flagellum:—
     - a. Front cut into six lobes or teeth besides the inner supra-orbital angles: antero-lateral borders cut into six teeth..... — CHARYBDIS (=GONIOSOMA).
     - b. Front cut into two broad lobes besides the inner supra-orbital angles: antero-lateral borders cut into five teeth..... — THALAMONYX.

B. The extent of the fronto-orbital border is nearly equal to the greatest breadth of the carapace, so that the antero-lateral borders of the carapace are nearly at right angles with the front: the prolongation of the basal antenna-joint that meets the front and occludes the orbital hiatus is so long that the flagellum is far distant from the orbit. The antero-lateral borders are cut into five teeth of which the fourth is often small, or rudimentary, or sometimes obsolete.... — THALAMITA.

II. The eyes are borne on basal stalks of enormous length, and the orbits extend along the entire length of the antero-lateral borders of the carapace..... — PODOPHTHALMUS.

Subfamily I. CARCININÆ.

Carcinus, Leach.

Carcinus, Leach, Malac. Podophth. Brit. Text of pl. V.: Desmarest, Consid. Gen. Crust. p. 90: Milne Edwards, Hist. Nat. Crust. I. 433: De Haan, Faun. Japon. Crust. p. 13: Bell, British Stalk-eyed Crust. p. 75: A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV. 1860, pp. 228, 266; and Archiv. du Mus. X. 1861, p. 390.

Carcinides, M. J. Rathbun, Proc. Biol. Soc. Washington XI. 1897, p. 164 (*new name proposed*).

Carapace approaching the hexagonal, not broad, slightly but distinctly convex, the regions fairly well-defined (well-defined for a Portunoid), no distinct transverse ridges.

Front proper fairly well defined from the inner supra-orbital angles beyond which it projects slightly, three lobed, between a fourth and a fifth the greatest breadth of the carapace in width.

Antero-lateral borders thin, oblique, arched, cut into five teeth including the outer orbital angles, shorter than the postero-lateral borders.

Orbits with one faint notch in the upper and one in the concave lower border, the inner angle of the lower border dentiform but not very prominent. The antennules fold obliquely, but nearer the transverse than the longitudinal.

Basal antenna-joint slightly longer than broad, fixed; the flagellum, which is not very long, stands in the orbital hiatus.

Buccal cavern square, its greatest length a little more than its greatest breadth: the external maxillipeds are rather elongate, especially the merus which projects somewhat beyond the level of the edge of the endostome: epistome lozenge-shaped. The ridges that define the efferent branchial canals do not approach the edge of the endostome.

Chelipeds massive, just shorter than any of the first three pairs of legs, slightly unequal: arm short, without any spines: inner angle of wrist alone spiniform: no spines on the hand, which is deep and not prismatic: fingers stout, a little shorter than the palm, not very strongly toothed.

Legs stoutish: the last pair have the merus elongate and unarmed, the carpus not dilated, the propodite shortened and somewhat broadened, and the dactylus acutely lanceolate.

The abdomen of the male consists of five pieces, the 3rd–5th terga being fused.

Carcinus exhibits the relation of the Portunidæ to other Cyclometopan families, being related to *Pirimela* among the Cancridæ and to *Hoplozanthus* among the Xanthidæ.

1. *Carcinus mœnas*, (Linn.).

Cancer marinus sulcatus, Rumph, Amboinsch. Rariteitk. pl. vi. fig. O.

Cancer mœnas, Linnæus, Fauna Suecica p. 492; Mus. Ludov. Ulric. p. 436; and Syst. Nat. (xii) I. p. 1043: ["Pennant Brit. Zool. IV. p. 3, pl. iii. fig. 5" *sec.* Milne Edwards]: Baster, Naturkundige Uitspanningen Zeeplanten en Zee Insekten, Haarlem 1765, II. pl. ii. figs. 1-3: Herbst, Krabben, I. ii. 145, pl. vii. fig. 46: Fabricius, Ent. Syst. II. p. 450, and Suppl. p. 334: Bosc, Hist. Nat. Crust. I. p. 173, pl. iii. fig. 1: Latreille, Hist. Nat. Crust. V. p. 363: Risso, Hist. Nat. Crust. Nice, p. 12: Lamarck, Hist. Nat. Anim. sans Vertebr. V. Crust. p. 270: Dumeril in Dict. Sci. Nat. XI. 1818, p. 299: de Brebisson, Mem. Soc. Linn. Calvados, 1825, p. 233.

Portunus mœnas ["Leach, Edinb. Encycl. VII. p. 390" *sec.* Milne Edwards]: Costa, Faun. Regn. Napoli, Crost. Brach. p. 7.

Carcinus mœnas, ["Leach, Edinb. Encycl. VII. p. 429" *sec.* Milne Edwards]; and Trans. Linn. Soc. XI. 1815, p. 314; and Malac. Pod. Brit. pl. v: Desmarest, in Dict. Sci. Nat. XXVIII. 1823, p. 217; and Consid. Gen. Crust. p. 91: Risso, Hist. Nat. Eur. Mérid V. Crust. p. 7: Audouin, Explic. p. 84: Savigny Descr. Egypt. Crust. pl. iv. fig. 6: Milne Edwards in Cuvier Règne Anim. pl. x. fig. 3 and Hist. Nat. Crust. I. 434: ["Gould, Report on the Invertebrata of Massachusetts, p. 321" *sec.* A. Milne Edwards]: De Kay, Zoology of New York, pt. VI. Crust. p. 8, pl. v. figs. 5, 6: Lucas, Hist. Anim. Artic. in Expl. Sci. Algerie, Zool. I. i. p. 13; and Hist. Nat. Anim. Art. p. 95: Bell, British Stalk-eyed Crust. p. 76: Salter, Journ. Linn. Soc., Zool., IV. 1860, p. 34 (*process of moulting*): A. Milne Edwards, Archiv. du Mus. X. 1861, p. 391: Van Beneden, Rech. Faun. Litt. Belg. p. 133: Heller, Crust. Sudl. Europ. p. 91, pl. ii. figs. 14, 15; and Novara Crust. p. 30: W. C. McIntosh, Trans. Linn. Soc. XXIV. 1864, p. 79, pl. xix., xx. (*on the various kinds of hairs*): Sars, *vide* Zool. Rec. III. 1866, p. 224: Nardo, Annot. Crost. p. 87: Wood-Mason, Proc. Asiatic Soc. Bengal, 1873, p. 172, and Ann. Mag. Nat. Hist. (4) XII. 1874, p. 405: Brocchi, Ann. Sci. Nat. (6) II. 1875, Art. 2, p. 62, pl. xvi. figs. 89, 90, 100, 101. (*male parts*): Streets, Bull. U. S. Nat. Mus. VII. 1877, p. 109: Meinert, Nat. Tids., Copenhagen, (3) XI. 1877, p. 222, and (3) XII. 1879, p. 507: Kingsley, Proc. Ac. Nat. Sci. Philad. XXX. 1878, p. 321, and XXXI. 1879, p. 398; Nauck, Zeits. Wiss. Zool. XXXIV. 1880, p. 56 (*gastric teeth*): Boas, Stud. Decapod. (Vid. Selsk. Skr. (6) I. 2) p. 141: S. I. Smith, Trans. Conn. Acad. V. p. 34: Carrington and Lovett, Zoologist (3) VI. 1882, p. 12: Carus, Prodr. Faun. Medit. I. p. 518: Cano, Boll. Soc. Nat. Napol. III. 1889, p. 222: Mobius, SB. AK. Berl. 1893, pp. 75, 76: Ortmann, Zool. Jahrb. Syst., etc., VII. 1893-94, p. 423: Birula, Ann. Mus. Zool. Petersb. 1897, p. 448.

Carapace about three-fourths as long as broad, the regions fairly well defined, the gastric being divided into three areolæ, the surface finely granular, especially in the anterior half.

Front cut into three lobes, of which the middle one is acuminate.

Antero-lateral borders rather shorter than the postero-lateral, cut into five anteriorly-acuminate teeth. Posterior border forming a curve with the postero-lateral borders.

Orbits without any particular dorsal inclination, their major diameter about half the width of the inter-orbital space. Antennal flagella about $1\frac{1}{2}$ times the length of the orbit.

Chelipeds a little unequal, the longer one is less than $1\frac{1}{2}$ times the length of the carapace: the inner angle of the wrist is spiniform and there are two costæ along the upper surface of the hand, otherwise they are smooth and unsculptured. Palm deep and full, but not inflated, fingers stout, nearly as long as the palm in the shorter cheliped only.

Legs stout, smooth, unarmed: the 2nd and 3rd pairs, which are the longest, are about $1\frac{2}{3}$ times the length of the carapace: the fourth pair, which are also slightly longer than the larger cheliped, are a little shorter than the first pair.

Sixth abdominal tergum of male about twice as broad as long, with gradually convergent sides.

In the Indian Museum is a single male from Galle (Ceylon), besides numerous specimens from the Mediterranean and the North Sea.

The geographical distribution of *Carcinus mænas* has been referred to by several of the authors above-cited. The species has been found at various places on the Atlantic coast of the Northern United States and off the coast of Pernambuco (Brazil): it is the common shore-crab of the British Islands, and occurs in the North Sea almost up to Arctic limits, in the Baltic, and on the Atlantic coasts of the European continent: it is common in all parts of the Mediterranean, and has been found in the Black Sea and the Red Sea: it is an Indian species, though evidently a very rare one, and has been reported from the Hawaiian Islands, from the Bay of Panama, and—though there is doubt about this locality—from Australia.

Its range in fact corresponds very nearly with that of the Macruroid fish *Macrurus* (*Malacocephalus*) *lævis* Lowe, and recalls that of the Perciform fish *Lobotes surinamensis*.

In an *Account of the Investigator Deep Sea Madreporaria*, recently published by the Trustees of the Indian Museum, I have given lists of 43 species of marine animals that are common to the slopes (including both American and European sides) of the Atlantic and of the Oriental Region and Western Pacific, and in a subsequent *Account of the Investigator Deep Sea Brachyura*, also published by the Trustees of the Indian Museum, I have added several species of Crabs that are found both in American-Atlantic and in East-Indian waters: moreover, Captain A. R. S. Anderson, who is engaged in examining the Investigator Echinoids, has discovered some interesting affinities between the West-Indian, the Mediterranean, and the Oriental Echinoid fauna. So that the distribution of *Carcinus mænas* is not so singular as has been supposed.

The significance of this distribution has been discussed in the works just cited: it is emphasized by the fact that *Carcinus mænas* is a shore-crab.

Sub-family II. PORTUNINÆ.

Benthochascon, Alcock.

Benthochascon Hemingi, Alcock and Anderson, Ann. Mag. Nat. Hist., Jan. 1899, p. 10.

Benthochascon, Alcock, Investigator Deep Sea Brachyura, p. 68.

Carapace sub-quadrate, nearly as broad as long, its anterior portion arched and declivous, its posterior portion flat, the regions hardly defined: no transverse ridges.

Front not very well demarcated from the inner supra-orbital angles, about a fourth the greatest breadth of the carapace in width, cut into 3 (or 4) teeth.

Antero-lateral borders much shorter than the postero-lateral, cut into four teeth including the outer orbital angle. Posterior border broadly excised.

Orbits with indistinct traces of two grooves in the upper border, the lower border concave with the inner angle dentiform and prominent. The antennules fold nearly transversely.

Basal antennal joint short, but longer than broad, freely movable; the flagellum, which is not very long, stands in the orbital hiatus.

Epistome of good length fore-and-aft, not only in the middle but at the sides, well delimited from the palate, not encroached upon by the external maxillipeds. Buccal cavern square, rather broader than long; the external maxillipeds not elongate, their merus as broad as long. The efferent branchial channels defined by ridges.

Chelipeds massive, shorter than any of the first 3 pair of legs, slightly unequal: arm short, without spines: inner angle of wrist alone spiniform: hand deep, smooth or nearly so: fingers stout, as long as or longer than hand, strongly toothed.

Legs stoutish: in the last pair the merus is elongate, the carpus is shortened and somewhat broadened, and the propodite and dactylus are typically foliaceous for swimming.

2. *Benthochascon Hemingi*, Alcock and Anderson.

Benthochascon Hemingi, Alcock and Anderson, Ann. Mag. Nat. Hist., January, 1899, p. 10: Alcock, Investigator Deep Sea Brachyura, p. 69, pl. iii. fig. 2.

Carapace almost as broad as long, smooth (though finely frosted) except for slight inequalities of level that scarcely define the regions, strongly declivous in its anterior third.

Front cut into three lobes of which the middle one is bifid at tip: the front is separated from the inner supra-orbital angles by a groove, not by a notch.

Antero-lateral borders considerably less than two-thirds the length of the postero-lateral, cut into four teeth (including the outer orbital angle) of which the last is spiniform and is rather remote from the others.

Posterior border peculiar in being quite flush with the surface of the carapace, and concave or broadly excised.

Orbits large, their major diameter three-fourths the width of the front, without any dorsal inclination: there are two indistinct grooves in the upper border, and the lower border is concave with the inner angle prominent and acutely dentiform. Eyes large, placed mostly on the ventral surface of the eyestalk.

Antennal flagella not much longer than the orbit.

The external maxillipeds fall considerably short of the anterior edge of the palate.

Chelipeds somewhat unequal, the larger one is between $1\frac{1}{2}$ and $1\frac{2}{3}$ times the length of the carapace: except for a sharp tooth at the inner angle of the wrist, and for a small sharpish tubercle at the far end of the sharply-defined inner border of the hand, they are smooth and unsculptured. The hands are full and very deep: the fingers are stout but end in acute hooked tips: in the smaller cheliped, but not in the larger cheliped, they are longer than the hand.

Legs stoutish, compressed, a notch and tooth at the far end of the anterior border of the merus of all. The 2nd pair, which are slightly longer than the 1st and 3rd, are from $1\frac{2}{3}$ times to twice the length of the carapace: all three end in a very acute styliform dactylus. The 4th pair, which are about equal in length to the chelipeds, have the merus four times as long as broad, the carpus not particularly dilated, and the propodite and dactylus typically foliaceous and blade-like, the dactylus however ending in an acutely mucronate tip: the posterior border of the merus is unarmed.

In the Indian Museum are two specimens, both females, from the Andaman Sea 185 and 405 fms. The carapace of the larger one is 48 millim. long and 51 millim. broad.

Parathranites, Miers.

Lupocyclus (*Parathranites*) *orientalis*, Miers, Challenger Brachyura, p. 186.

Carapace hexagonal, convex, moderately transverse, the regions well defined and with some definitely-placed tubercles but no transverse ridges.

The front, which projects beyond the ill-defined inner supra-orbital angles, is less than a fourth the greatest breadth of the carapace in width, and is cut into four teeth.

Antero-lateral borders oblique, not much curved, cut into five teeth including the outer orbital angles.

Orbits with two wide fissures in the upper margin, the lower margin concave with the inner angle dentiform and prominent. The antennules fold transversely.

Basal antennal joint longer than broad, slender, not nearly filling the orbital hiatus, movable; the flagellum, which stands in the orbital hiatus, long.

Epistome short fore and aft, sunk; though well enough delimited from the palate somewhat encroached upon by the external maxillipeds. Buccal cavern square, its greatest length about equals its greatest breadth: external maxillipeds rather elongate, especially the merus.

Chelipeds moderately massive, shorter than any of the first 3 pair of legs; arm wrist and hand with spines; hand prismatic, fingers stout and strongly toothed.

Legs long and slender: in the fourth pair the merus and carpus though shortened are not much broadened, and the propodite and dactylus are foliaceous and typically paddle-like.

The abdomen of the male consists of 5 segments, the 3rd–5th terga being fused.

As Miers says, this genus is allied to *Bathynectes*: in fact it is nearer to Bathynectes than to *Lupocyclus*.

3. *Parathranites orientalis*, Miers.

Lupocyclus (Parathranites) orientalis, Miers, Challenger Brachyura, p. 186, pl. xvii. fig. 1.

Carapace about three-fourths as long as broad (spines included), decidedly convex, the regions well demarcated, the surface granular and somewhat hairy—especially at the antero-lateral margins. There is always a tubercle in the middle line on the posterior part of the gastric region and sometimes three, in a transverse series, in front of it: there are one, or two close side-by-side, in the middle of the cardiac region, and from two to four in a fairly longitudinal series along the inner limit of either epibranchial region.

Front hardly delimited from the almost obsolete inner supra-orbital angles beyond which it projects, cut into four horizontal subacute teeth of nearly equal size.

Antero-lateral borders cut into 5 teeth, of which the first (the outer orbital angle) is remarkably prominent, the next three are very acutely anteriorly-acuminate, and the last—equally acute—stands out nearly at right angles to the others.

Posterior border nearly straight, making a dentiform angle of junction with the postero-lateral borders.

Orbits deep, without any particular dorsal inclination, their major diameter nearly equal to the width of the front; the inner angle of the lower border bilobed, the inner lobe dentiform and projecting beyond the level of the tips of the frontal teeth.

Merus of external maxillipeds produced a good deal beyond the articulation of the flagellum.

Chelipeds moderately massive, their length not $1\frac{2}{3}$ times that of the carapace: a spinule at the far end of the anterior border of the ischium: a spine near the middle of the anterior border, and a spinule near the far end of the posterior border, of the arm: the inner angle of the wrist is produced to form a spine nearly half as long as the palm, and on the outer surface of the wrist are 3 spinules of which one is almost a spine: hand not inflated, its upper surface with 2 costæ and 3 spines of which the one at the far end of the inner border is the largest; a faint ridge along the outer surface of the hand, and one or two along the inner surface: fingers stout, nearly as long as the hand.

First 3 pair of legs long and slender, the first pair well over twice the length of the carapace. The fourth pair are very little shorter than the chelipeds and have the merus slender and quite unarmed.

2nd and 3rd abdominal terga strongly carinated in both sexes: the 6th tergum of the adult male is nearly as long as broad and has nearly parallel sides.

Colours in life salmon-pink above, tips of spines red.

In the Indian Museum are 54 specimens from off the Malabar coast 56-68 fms., off the Coromandel coast 33 fms., and from the Andamans.

The carapace of the largest specimen is 12 millim. long and 17 millim. broad.

Sub-family II. CAPHYRINÆ.

Lissocarcinus. Adams and White.

Lissocarcinus, Adams and White, Samarang Crust. p. 45: A. Milne Edwards, Ann. Sci. Nat. Zool., (4) XIV, 1860, p. 228, and Archiv. du Mus. X. 1861, p. 417: Miers, Challenger Brachyura, p. 204.

Asecla, Streets, Bull. U. S. Nat. Mus. VII. 1877, p. 110.

Carapace either not, or very little, broader than long, smooth or with a single ridge running obliquely inwards from the last tooth of either antero-lateral border.

Front prominent beyond the inner supra-orbital angles which may be either well or rather ill defined, laminar, subentire or distinctly notched

in the middle line, its breadth (exclusive of the inner supra-orbital angles) is from half to a third the greatest width of the carapace.

Antero-lateral borders little oblique, moderately arched, cut into five lobes or teeth, including the outer orbital angle.

Basal antenna-joint short but not peculiarly broad, its outer angle is produced as a lobule that meets the front and fills the orbital hiatus so as to exclude the flagellum.

The two fissures in the upper edge of the orbit may be distinct, or may be almost indistinguishable. The antennules fold nearly transversely or a little obliquely.

Epistome short, and though well enough demarcated from the palate, somewhat overlapped by the external maxillipeds. Buccal cavern squarish, broader than long, the efferent branchial channels well defined.

Chelipeds short, but a little longer than the legs: arm short, without any distinct spines, only the inner angle of wrist dentiform; palm not prismatic, fingers stout and rather shorter than the palm.

The propodite and dactylus of the last pair of legs are typically foliaceous swimming paddles, but the carpus and merus are not particularly dilated.

The abdomen of the male consists of 5 pieces, the 3rd–5th terga being fused.

Lissocarcinus is distinguished from *Thalamonyx* chiefly by the subcircular or obovate carapace and by the stumpy little sculptured chelipeds.

Key to the Indian species of Lissocarcinus.

I. Carapace as long as broad, flat, obovate; front broadly triangular, notched at tip ... ... *L. polybioides.*

II. Carapace broader than long, convex:—

1. Carapace sub-rotund; front sub-entire, being dorsally grooved but not notched in the middle line, supra-orbital angles obscurely defined ... ... *L. orbicularis.*

2. Carapace distinctly broader than long; front cut into two broad lobes exclusive of the well defined dentiform supra-orbital angles ... ... *L. lævis.*

4. *Lissocarcinus polybioides*, Adams and White.

Lissocarcinus polybioides, Adams and White, Samarang Crust. p. 46, pl. xi. fig. 5: A. Milne Edwards, Archiv. du Mus. X. 1861, p. 417: Haswell, Cat. Austral. Crust. p. 83: Miers, Challenger Brachyura, p. 205: J. R. Henderson, Trans. Linn. Soc. Zool., (2) V. 1893, p. 378.

Carapace as long as broad, obovate with the posterior part truncated and much constricted, flat, smooth except for a low transverse ridge passing obliquely inwards from the last tooth of either antero-lateral border.

Front projecting far beyond the well pronounced inner supra-orbital angles, lamellar, horizontal, broadly triangular with the apex rather deeply notched: its breadth (not including the inner supra-orbital angles) is a little less than half the greatest breadth of the carapace.

Antero-lateral borders curved, cut into 5 anteriorly acuminate teeth (including the outer orbital angles) of which the first is the largest and the 5th the smallest.

Posterior border of dorsum of carapace forming a curve with the postero-lateral borders.

Orbits small, their major diameter less than a third the width of the inter-orbital space; two faint grooves in the upper border, the inner angle of the lower border dentiform but not prominent.

Chelipeds moderately stout, longer and stouter than the legs, a little longer than the carapace: inner angle of wrist dentiform, two or three little points—of which one is slightly larger than the others—on the outer angle: hand smooth, except for 2 crests—each of which ends in a tooth—on the upper surface, and for a small tubercle in front of the apex of the wrist-joint: fingers stout, a little shorter than the palm.

Merus of last pair of legs twice as long as broad, its posterior border, like that of the propodite, is smooth and unarmed.

6th abdominal tergum of male longer than broad, with slightly-curved gradually convergent sides.

Sternum elongate-oval particularly so in the male.

In the Indian Museum are 11 specimens, from Madras, from Orissa and Ganjam coasts 13–28 fms., from Malabar coast 28 fms., and from the Andamans.

A small species: the carapace of an egg-laden female is 7 millim. in both diameters.

5. *Lissocarcinus orbicularis*, Dana.

Lissocarcinus orbicularis, Dana, Proc. Ac. Nat. Sci. Philad. 1852, p. 86, and U. S. Expl. Exp. Crust. pt. I. p. 288, pl. xviii. fig. 1*a-e*: A. Milne Edwards, Archiv. du Mus. X. 1861, p. 418: Richters in Mobius Meeresf. Maurit. p. 154: Miers, Zool. H. M. S. Alert, pp. 518, 541, and P. Z. S. 1884, pp. 10, 12, and Challenger Brachyura, p. 205: Ortmann, Zool. Jahrb., Syst., VII. 1893-94, p. 87.

Lissocarcinus pulchellus, Muller, Verh. Nat. Ges. Basel, VIII. pp. 475, 482, pl. v. fig. 6.

Carapace slightly broader than long, sub-circular, convex with thin edges, smooth except for a more or less distinct ridge or elevation running obliquely inwards from the last tooth of either antero-lateral border.

Front projecting a little beyond the supra-orbital angles (which are not well pronounced), arched, entire though dorsally concave in the middle line, its breadth is between a half and a third the greatest breadth of the carapace.

Antero-lateral borders curved, divided into five lobes, or, rather, broad flat puckers.

Orbits small, their major diameter is about a fourth the width of the inter-orbital space: two closed fissures near the outer end of the upper margin; inner angle of lower margin dentiform but not prominent.

Antennal flagella short.

Chelipeds a little longer than the carapace: inner angle of wrist dentiform: upper surface of hand with two carinæ, each ending in a blunt tooth, there is also a little tubercle in front of the apex of the wrist joint and an obscure ridge along the outer surface: fingers stout, a little shorter than the palm, the dactylus sharply carinate dorsally.

Legs stout, slightly shorter than the chelipeds, the merus of the last pair is about twice as long as broad and its posterior border, like that of the propodite, is smooth.

Colours very characteristic: carapace dark maroon (chocolate in spirit) with symmetrical yellow markings, chelipeds and legs cross-banded yellow and maroon.

In the Indian Museum is a single egg-laden female from Kiltán I. (Laccadives): its carapace is 10 millim. long and 11·5 millim. broad.

6. *Lissocarcinus lævis*, Miers.

Lissocarcinus lævis, Miers, Challenger Brachyura, p. 205, pl. xvii, fig 3: J. R. Henderson, Trans. Linn. Soc. Zool., (2) V. 1893, p. 378.

Carapace distinctly broader than long, convex, perfectly smooth.

Front a little prominent beyond the well pronounced supra-orbital angles, divided into two broad lobes, its breadth (not including the supra-orbital angles) is barely a third the greatest breadth of the carapace.

Antero-lateral borders curved, cut into 5 blunt lobes, of which the first and last are the smallest.

Orbits large, their major diameter nearly half the width of the inter-orbital space, their upper border entire, though traces of the two sutures may be visible.

Chelipeds rather longer than the carapace; a small lobule at the far end of the anterior border of the arm, inner angle of wrist stoutly spiniform, hand smooth except for a tiny tubercle in front of the apex of the wrist joint.

First 3 pairs of legs slender: merus of last pair less than twice as long as broad, its posterior border ending in an almost dentiform carina.

6th abdominal tergum of male broader than long, broadest in the middle, its sides therefore curved.

In spirit the carapace is white with some purplish-brown markings.

In the Indian Museum are 9 specimens, from off Ceylon 26½ fms., off the Malabar coast 26–31 fms., off Mergui 40 fms. and from the Andamans.

The largest specimen has a carapace 9·5 millim. long and 11 millim. broad.

Sub-family III. LUPINÆ.

Alliance I. *Lupocycloida.*

Lupocyclus, Adams and White.

Lupocyclus, Adams and White, Samarang Crust. pp. 46, 47: A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV. 1860, p. 228, and Archiv. du Mus. X. 1861, p. 387: Miers, Challenger Brachyura, p. 185 (not subgenus *Parathranites*).

Carapace little broader than long, or even sub-circular, convex, the regions faintly indicated, with granular transverse ridges of definite position.

Front proper (not including the rather obscurely defined reduplicated inner supra-orbital angles) prominent and cut into 4 teeth.

Antero-lateral borders moderately oblique and moderately curved, about equal in length to the postero-lateral, cut into 5 or 6 teeth (including the outer orbital angle) with little denticles in some or all of the interdental spaces, bringing the total number to 9. (The denticles are sometimes so small as to escape notice).

Orbits large with a considerable dorsal inclination: the upper border with 2 fissures: the inner angle of the lower border though dentiform does not project anywhere near the level of the tips of the middle frontal teeth. The antennules fold transversely.

Basal antenna-joint about as long as broad, filling the orbital hiatus; not quite firmly fixed; flagellum long, standing in the orbital hiatus.

Epistome short, somewhat sunken. Buccal cavern somewhat broader than long: efferent branchial channels well defined.

Chelipeds very long, much longer than any of the legs, rather slender, the hand slenderer than the arm: the arm with spines, both inner and outer angles of wrist spiniform, the hand with spines and costæ, the fingers long and slender.

Legs slender: propodite and dactylus of last pair typically foliaceous and blade-like for swimming.

Abdomen of male five-jointed the 3rd–5th terga being fused: the first tergum almost concealed beneath the carapace.

Key to the Indian species of Lupocyclus.

I.	Frontal teeth blunt-pointed; chelipeds less than three times the length of the carapace, the arm being stout and prismatic: merus of last pair of legs broadened and compressed	*L. rotundatus.*
II.	Frontal teeth acutely pointed: chelipeds more than three times the length of the carapace, the arm being slender and cylindrical: merus of last pair of legs slender	*L. strigosus.*

7. *Lupocyclus rotundatus*, Adams and White.

Lupocyclus rotundatus, Adams and White, Samarang Crust. p. 47, pl. xii. fig. 4: A. Milne Edwards, Archiv. du Mus. X. 1861, p. 387: de Man, Notes Leyden Mus. V. 1883. p. 153: Miers, Zool. H. M. S. Alert, pp. 184, 234, and Challenger Brachyura, p. 186. See also de Man, Zool. Jahrb., Syst. etc., II. 1886–87, p. 718.

? *Goniosoma inæquale*, Walker, Journ. Linn. Soc., Zool., XX. 1886-90 (1887) p. 116, pl. viii. fig. 4.

? *Lupocyclus inæqualis*, Henderson, Trans. Linn. Soc. Zool. (2) V. 1893, p. 378.

Carapace sub-circular in the young but becoming as much as five-sixths as long as broad in large individuals, convex, subtomentose, its surface broken by transverse granular ridges which are similar in number and position to those of *Neptunus* (*Lupocycloporus*) *whitei* A. M. Edw. but are more elevated and discontinuous and therefore look more like series of tubercles.

Front prominent beyond the dorsally-grooved, or reduplicated, inner supra-orbital angles, cut into four teeth of not very unequal size, of which the middle two are the most prominent and the most acute. Supra-orbital margin with two sutures or not very open fissures.

Antero-lateral borders cut into five rather coarse teeth (including the outer orbital angle), and in every one of the interdental spaces there is a denticle: these intervening denticles are so small in young individuals that some of them may escape notice, but in large individuals they are all very distinct. Posterior border straight, but forming a curve with the postero-lateral borders.

Antennal flagella more than half as long as the carapace.

Chelipeds rather more than $2\frac{1}{2}$ times the length of the carapace in the male, and having the same form and proportions as those of *Neptunus* (*Lupocycloporus*) *whitei*, the arm being much stouter than the hand and the surface of most of the segments being granular with a squamiform sculpture: 5 spines on the anterior border of the arm and 2 in the distal third of the posterior border: hand and wrist slender, costate—the costæ granular: a spine at the inner and the outer angles of the wrist: hand with 3 spines, one being in front of the apex of the wrist-joint, the other two being side by side some little distance behind the finger-joint. The fingers are stoutish, as long as the hand, and are gently incurved, but have the extreme tips sometimes slightly bent outwards: their opposed edges have jagged teeth like those of any *Neptunus*.

The first three pair of legs are slender. The fourth pair have all their joints broadened as in any *Neptunus*, though the merus and carpus are not quite so broad, relatively, as in that genus; there is a spine near the far end of the posterior border of the merus of this pair.

The 2nd and 3rd abdominal terga are sharply and decidedly carinate.

In the Indian Museum are 14 specimens representing both sexes and several ages, from the Andaman Sea up to 55 fms. and from off Ceylon $26\frac{1}{2}$–32 and 34 fms. The largest male has the carapace 15 millim. long and 19 millim. broad, but there are two egg-laden females only about half this size.

The four smallest specimens are identical with White's figure of *Lupocyclus rotundatus*, the two largest specimens agree with Walker's description and figure of *Goniosoma inæquale*, the six middle-sized specimens cannot be decisively separated from either: I therefore think that all belong to one species.

8. *Lupocyclus strigosus*, n. sp.

(an *Lupocyclus philippinensis*, Semper, Nauck ?)

Except in the form of the chelipeds (which are even slenderer than those of *Lupa forceps*) and last pair of legs, this species is very much like *L. rotundatus*, from which it differs in the following characters:—

(1) the carapace is perhaps a little more nearly circular, and is distinctly more convex:

(2) the front is more prominent, is practically confluent with the inner supra-orbital angles, and is cut into four *sharp* teeth, of which the middle two are much smaller than the others:

(3) the antero-lateral borders are armed with five slender spiniform teeth *not* including the outer orbital angle, and the denticles of the interspaces are represented by granules or are quite inconspicuous:

(4) the chelipeds in the male are $3\frac{3}{4}$ times the length of the carapace and are very slender, especially in the palm: there are 6 or 7 spines along the anterior border of the arm, which is a slender cylindrical joint, and two much smaller ones in the distal fourth of the posterior border: the fingers are considerably longer than the palm, are extremely slender, and their opposed edges are armed with close-set fine regular teeth having larger acicular teeth at fairly regular intervals—much as in the Leucosine genus *Arcania*:

(5) the last pair of legs, though otherwise similar to those of *L. rotundatus*, have the basal joints, up to and including the carpus, slender, sub-cylindrical, and, in fact, hardly stouter than the corresponding joint of the other legs.

In other respects this species agrees with *L. rotundatus*.

In the Indian Museum are five specimens—from the Andaman Sea 15 fms., from off the Madras coast, 33 fms., and from off the Konkan coast, 56–58 fms.

In the type specimen the carapace is 8 millim. long and 9 millim. broad.

Carupa, Dana.

Carupa, Dana, Silliman's Amer. Journ. Sci. and Arts (2) XII. 1850, p. 129; Proc. Ac. Nat. Sci. Philad. 1852, p. 85; and U. S. Expl. Exp. Crust. pt. I. p. 279: A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV. 1860, p. 228, and Archiv. du Mus. X. 1861, p. 386.

Carapace transverse, broad, moderately convex, with smooth unbroken surface.

The front proper projects slightly beyond the rather ill-defined inner supra-orbital angles, and is either broadly bilobed or cut into four shallow lobes: its breadth is about a fourth the greatest breadth of the carapace.

Antero-lateral borders moderately oblique and arched, about the same length as the postero-lateral, cut into 7 rather irregular lobes (including the outer orbital angles).

The orbit, which has little or no dorsal inclination, has two notches in its upper border; the lower border crenulate. The antennules fold almost transversely.

Basal antenna-joint as long as broad, rather slender; the flagellum, which is of moderate length, stands in the orbital hiatus.

Epistome sufficiently long. Buccal cavern squarish, broader than long, the efferent branchial channels very well defined.

Chelipeds longer and vastly more massive than the legs: arm with spines, one or both angles of wrist spiniform; palm inflated, massive, nearly smooth: fingers stout, hardly as long as palm, strongly toothed.

Legs slender: in the fourth pair the merus is elongate and the carpus slender, but the propodite and dactylus are typical swimming paddles.

First abdominal tergum narrow, almost hidden by the carapace: in the male the 2nd–5th terga are fused—though the suture between the 2nd and 3rd may be visible—so that the abdomen consists of 4 pieces only.

9. *Carupa læviuscula*, Heller.

Carupa læviuscula, Heller, Verh. zool. bot. Ges. Wien, XII. 1862, p. 520, and Novara Crust, p. 27, pl. iii. fig. 2: de Man, Notes Leyden Mus. V. 1883, p. 152, and Archiv. f. Naturges. LIII. 1887, i. p. 336: Ortmann, Zool. Jahrb., Syst. VII. 1893-94, p. 68 and in Semon's Forschungsr. Crust. (Jena. Denk. VIII) p. 44: Zehntner, Rev. Suisse Zool. II. 1894, p. 161.

Carapace about $\frac{2}{3}$ as long as broad, perfectly smooth to the naked eye, frosted with minute granules under the lens.

Front cut into 4 shallow lobes, of which the middle two are the narrowest. Supra-orbital margin with two notches, infra-orbital margin cut into four lobes of which the middle two are the narrowest.

Antero-lateral borders cut into 7 teeth (including the outer orbital angle), of which the 5th is the smallest and the 6th the largest and most acute. The postero-lateral angles of the carapace are well defined.

Antennal flagella more than half the length of the carapace.

Chelipeds about $2\frac{1}{4}$ times the length of the carapace, in the male: arm short with 3 claw-like spines on the anterior border, the posterior border being smooth: inner angle of wrist strongly spiniform, the outer angle rounded, but armed with a spinule below: hand smooth, its upper border well defined.

In young specimens, as in the young of *Scylla serrata*, there may be two faint costae or two lines of small granules along the upper surface of the hand, and also there may be some costiform lines of small granules on the upper surface of the wrist.

The legs are slender and smooth: the last pair have only the last two joints dilated for swimming.

In the Indian Museum are two specimens (one badly damaged) from the Andamans and one from the Madras coast—besides one from Samoa and one from Mauritius.

Alliance II. *Lupoida.*

Scylla, De Haan.

Scylla, De Haan, Faun. Japon. Crust. p. 11: A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV. 1860, pp. 228, 249, and Archiv. du Mus. X. 1861, p. 347: Miers, Challenger Brachyura, p. 184.

Carapace transverse, broad, moderately convex, with an almost unbroken surface.

Front proper well delimited from the inner supra-orbital angles, cut into four teeth: its breadth (not including the supra-orbital angles) is between a fourth and a fifth the greatest breadth of the carapace.

Antero-lateral borders oblique, arched, longer than the postero-lateral, cut into 9 teeth of nearly equal size.

Orbit without any dorsal inclination: two nearly closed fissures in its upper wall: the inner angle of the lower border dentiform and prominent. The antennules fold nearly transversely.

Basal antenna-joint short and broad, its antero-external angle produced to form a lobule lying in the orbit: the flagellum, which is of good length, stands in the orbital hiatus.

Epistome sufficiently long fore and aft, not sunken. Buccal cavern squarish, broader than long: the efferent branchial channels cavernous, but not defined by ridges.

Chelipeds massive, longer than any of the legs: arm wrist and hand with definitely placed spines: hand deep and full, not prismatic, not costate.

Legs stout, moderately compressed: in the fourth pair the merus and carpus are shortened and broadened, and the propodite and dactylus are typically foliaceous for swimming.

Abdomen of male rather broadly triangular, consisting of 5 segments, the 3rd–5th terga being fused. The first tergum is much concealed beneath the carapace.

10. *Scylla serrata* (Forsk.) De Haan.

Cancer serratus, Forskal, Descr. Anim. p. 90.

Cancer olivaceus, Herbst, Krabben, II. V. 157, pl. xxxviii. fig. 3.

Portunus tranquebaricus, Fabricius, Ent. Syst. Suppl. p. 366; Bosc, Hist. Nat. Crust. I. p. 219; Latreille, Hist. Nat. Crust. VI. p. 16 and Encycl. Meth. X. p. 191.

Portunus serratus, Rüppell, 24 Krabben roth. Meer. p. 10, pl. ii.

Lupea tranquebarica, Milne Edwards, Hist. Nat. Crust. I. 448.

Lupea lobifrons, Milne Edwards, Hist. Nat. Crust. I. 453 (*fide* A. M. Edw.).

Scylla serrata De Haan, Faun. Japon. Crust. p. 44: Krauss, Sudafr. Crust. p. 25: A. Milne Edwards, Ann. Sci. Nat. Zool. (4) XIV. 1860, p. 252, and Archiv. du Mus. X. 1861, p. 349, and Nouv. Archiv. du Mus. IX. 1873, p. 162, and in Maillard's

l'île Réunion, Annexe F p. 2: Hess Archiv. f. Naturges. XXXI. 1865, i. pp. 139, 172: Heller, Novara Crust. p. 27: Miers, Crust. New Zealand, p. 27: Hilgendorf, MB. AK. Berl. 1878, p. 799: E. Nauck, Zeits. Wiss. Zool. XXXIV. 1880, p. 59, pl. i. figs. 22, 24 (*gastric teeth*): Haswell, Cat. Austral. Crust. p. 79: Miers, Ann. Mag. Nat. Hist. (5) V. 1880, p. 238; and Zool. H. M. S. Alert, pp. 518, 538; and Challenger Brachyura, p. 185: Filhol, Crust. N. Zel., Miss. île Campbell, p. 382: de Man, Archiv. Naturges. LIII. 1887, i. p. 332; and in Weber's Zool. Ergebn. Niederl. Ost. Ind. II. 1892, p. 285: Cano, Boll. Soc. Nat. Napol. III. 1889, p. 215: Ortmann, Zool. Jahrb. Syst. VII. 1893, p. 78, and in Semon's Forschungsr. (Jena-Denk. VIII.) Crust. p. 45: Henderson, Trans. Linn. Soc. Zool., (2) V. 1893, p. 372.

Scylla tranquebarica, Dana, U. S. Expl. Exp. Crust. pt. I. p. 270: Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 38.

? *Achelous crassimanus*, Macleay Ill. Annulosa. S. Afr. p. 61, (*sec.* A. M. E.).

Carapace about $\frac{8}{9}$, or a little less, as long as broad, practically smooth, except for a faint granular ridge running obliquely inwards across either branchial region from the last spine of the antero-lateral border.

Front cut into four lobes or bluntish teeth of about equal size and prominence. Antero-lateral borders cut into 9 sharply acuminate teeth of about equal size: posterior border forming a curve with the postero-lateral borders, the points of junction sometimes slightly thickened.

Merus of external maxillipeds oblique but not having the antero-external angle distinctly produced in a lateral direction.

Chelipeds not quite twice the length of the carapace in the adult male, but shorter than this in the female and young male. Arm with 3 spines on the anterior border, and 2 on the posterior border—one terminal, the other submedian: a strong spine at inner angle of wrist, the outer angle being rounded and armed with one, or sometimes two, small spines or teeth: hand with 3 spines or tubercles, one being in front of the apex of the wrist-joint, the other two being side by side behind the finger-joint—(the outer of these two is sometimes obsolescent).

Legs unarmed.

Abdomen of male broadly triangular.

An extremely common crab in all the estuaries and backwaters of India, from Karáchi to Mergui. It grows to a large size.

In young specimens the frontal lobes are broad and indistinct, the upper surface of the palm is traversed by two faint but distinct longitudinal costæ, and there may be a transverse granular line across the gastric region.

This is the common edible crab of India.

Neptunus, De Haan, A. Milne Edwards, Miers.

Neptunus, De Haan, A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV. 1860, p. 226 and Archiv. du Mus. X. 1861, p. 314 (*ubi syn.*)

Neptunus, *Achelous*, *Amphitrite*, *Pontus*, De Haan, Faun. Japon. Crust. pp. 7, 8, 9.

Posidon, Herklots, Add. Faun. Carcin. Afric. Occ. p. 3.

Lupa, *Arenaeus*, *Amphitrite*, Dana, U. S. Expl. Exp. Crust. pt. I. pp. 270, 275, 289.

Euctenota, Gerstaecker, Archiv. f. Naturges. XXII. 1856, i. p. 131.

Neptunus, *Achelous*, A. Milne Edwards *op^o. cit.*

Callinectes, Stimpson, Ann. Lyc. Nat. Hist. New York, VII. 1860, p. 220.

Xiphonectes, A. Milne Edwards, Nouv. Archiv. du Mus. IX. 1873, p. 157.

Hellenus, A. Milne Edwards, Miss. Sci. Mex., Crust. pp. 210, 221.

Neptunus, *Xiphonectes*, Miers, Challenger Brachyura, pp. 171, 183.

Portunus, M. J. Rathbun, see Proc. Biol. Soc. Washington, June, 1897, pp. 155, 160.

Carapace usually transverse, broad, and depressed or little convex, often with the surface areolated.

Front proper well delimited from the inner supra-orbital angles and cut into from 3 to 6—usually *four*—teeth : its breadth (not including the supra-orbital angles) is from a sixth to a fifth the greatest breadth of the carapace (lateral epibranchial spines not included), and it is often somewhat receding.

Antero-lateral borders oblique, arched, longer than the postero-lateral, cut into 9 regular teeth (including the outer orbital angle) of which the 9th may be enlarged or not.

The orbit usually has 2 fissures or sutures in the upper border, which border is less prominent than the lower border, so that the orbit very often has a dorsal inclination : the lower border has a fissure or suture near the outer angle, and the inner angle is dentiform and usually very prominent. The antennules fold transversely.

The basal antenna-joint is peculiarly short and has its antero-external angle produced to form a lobule or spine extending into the orbit : the flagellum, which is of fair length, stands in the orbital hiatus.

Epistome short or even linear, sometimes prolonged in the middle line to form a spine lying below the inter-antennulary septum. Buccal cavern squarish, broader than long, the efferent branchial channels almost always very well defined.

Chelipeds longer, usually much longer, than any of the legs, and massive : arm with spines, both inner and outer angles of wrist spiniform, palm prismatic costate and usually with spines, fingers usually nearly as long as the palm and strongly toothed.

Legs compressed : in the last pair the merus and carpus are short and broad, and the propodite and dactylus are typically foliaceous and paddle-like for swimming.

The abdomen of the male is five-jointed, the 3rd–5th terga being fused : the 1st tergum in both sexes is almost entirely concealed beneath the carapace.

The Indian species of the genus *Neptunus* fall into five groups, or subgenera, which are characterized as follows :—

I. Carapace very broad, little convex, and having the junction of the posterior with the postero-lateral angles rounded. Front not projecting beyond, or even receding behind, the internal supra-orbital angles : the last spine of the antero-lateral borders enormously larger than any of the others. Orbits of moderate size and having only a slight dorsal inclination. Antero-external angle of basal antenna-joint produced to a spiniform process lying in the orbit. Epistome produced in the middle line to form a very prominent spine : the antero-external angle of the merus of the external maxillipeds rounded, not produced laterally. Hand at least as massive as the arm ..... NEPTUNUS.

II. Carapace moderately broad, little convex, and having the postero-lateral junctions rounded. Front hardly projecting beyond the internal supra-orbital angles, but not receding : the last spine of the antero-lateral borders a good deal the largest. Orbits large, with a very strong dorsal inclination. Antero-external angle of basal antenna-joint forming a blunt lobe-like process. Epistome slightly produced in a spiniform manner : the antero-external angle of the merus of the external maxillipeds strongly produced in a lateral direction. Hand at least as massive as arm ..... AMPHITRITE.

III. Carapace suborbicular or not very broad, flat, the postero-lateral junctions rounded. Front slightly projecting beyond the internal supra-orbital angles : the last spine of the antero-lateral border either hardly larger or actually smaller than any of the others. Orbits of moderate size and with a moderate dorsal inclination. Antero-external angle of basal antenna-joint forming a lobe-like process. Epistome hardly produced in the middle line : antero-external angle of merus of external maxillipeds strongly produced in a lateral direction. Hand hardly less massive than the arm ..... ACHELOUS.

IV. Carapace moderately broad, flat or little convex, and having the postero-lateral junctions angular or actually spiniform. Front decidedly prominent beyond the inner supra-orbital angles : the last spine of the antero-lateral borders very much the largest. No free prolongation of the epistome in the middle line. Hand about as massive as arm. [Except in *N. spinipes*, the angle of the basal antenna-joint is a lobe-like process. Except in *N. tuberculosus* and *brockii*, the orbits are large with a very strong dorsal inclination. Except in *N. hastatoides*, the antero-external angle of the

merus of the external maxillipeds is not produced in a lateral direction] ..... HELLENUS.

V. Carapace moderately broad, distinctly convex, rounded postero-laterally. Front projecting beyond the inner supra-orbital angles: the last spine of the antero-lateral borders slightly the largest. Orbits large, with strong dorsal inclination. Basal antenna-joint longitudinally grooved on ventral surface. No free prolongation of the epistome in the middle line: no lateral expansion of the antero-external angle of the merus of the external maxillipeds. Hand much slenderer than the arm ..... LUPOCYCLOPORUS.

Key to the Indian species of the genus Neptunus.

1. Hand either more, or but little less, massive than arm:—
   - A. Last spine of antero-lateral border much the largest:—
     1. Posterior angles of carapace rounded (NEPTUNUS):—
        - i. Antero-external angle of merus of external maxillipeds rounded:—
          - *a.* No spine on the posterior border of the arm ..... *N. sanguinolentus.*
          - *b.* A spine at far end of posterior border of arm ..... *N. pelagicus.*
        - ii. Antero-external angle of merus of external maxillipeds strongly produced in a lateral direction (AMPHITRITE):—
          - *a.* No spot on dactylus of last pair of legs..... *N. gladiator.*
          - *b.* A spot on dactylus of last pair of legs: crests of hands and abdomen with a pearly sheen ..... *N. argentatus.*
          - *c.* Spine at inner angle of wrist two-thirds as long as palm ..... *N. petreus.*
     2. Posterior angles of carapace square or spiniform (HELLENUS):—
        - i. Posterior angles square: front cut into 3 teeth ..... *N. tenuipes.*
        - ii. Posterior angle spiniform: front cut into 4 teeth:—
          - *a.* Two distinct spines on posterior border of arm:—
            - *α.* After half of distal border of merus of last pair of legs finely serrulate ..... *N. hastatoides.*
            - *β.* After half of distal border of merus of last pair of legs smooth..... *N. andersoni.*

ϕ. A spine near far end of posterior border of merus of last pair of legs ..... *N. spinipes.*

b. A single true spine on posterior border of arm :—

π. Middle teeth of front very much smaller and less prominent than the outer: three spines on hand ..... *N. longispinosus.*

β. Middle teeth of front nearly as large as, and more prominent than, the outer: two spines on hand ..... *N. tuberculosus.*

ϕ. Teeth of front obsolescent: no spines on hand ..... *N. brockii.*

B. Last spine of antero-lateral border either hardly larger or even smaller than any of the others (ACHELOUS) :—

1. Carapace granular, last spine of antero-lateral border slightly the largest ..... *N. granulatus.*
2. Carapace polished, last spine of antero-lateral border slightly smaller than the others ..... *N. orbicularis.*

II. Hand slender, much less massive than arm (LUPOCYCLOPORUS) :

1. Front cut into four teeth of nearly equal size, of which the middle two are the most prominent ..... *N. whitei.*
2. Front cut into four lobes, of which the middle two are much the smaller and are hardly more prominent than the others ..... *N. gracilimanus.*

Dr. J. R. Henderson includes *Neptunus sieboldi*, A. Milne Edwards (Archiv. du Mus. X. 1861, pp. 323, 339, pl. xxxv. fig. 5), which according to de Man is identical with *N. convexus* De Haan, in the Indian Fauna. It appears to belong to the subgenus *Neptunus*, and is distinguished by the uniformity of size and shape of the frontal teeth, by the small size of the last spine of the antero-lateral border, and by the absence of any spine on the posterior border of the arm.

11. *Neptunus sanguinolentus*, (Herbst).

Cancer pelagicus, (part), Fabricius, Mant. Ins. I. p. 318, and Ent. Syst. II. 447.

Cancer sanguinolentus, Herbst, Krabben, I. ii. 161, pl. viii. figs. 56, 57.

Portunus sanguinolentus, Fabricius, Ent. Syst. Suppl. p. 367 : Bosc, Hist. Nat. Crust. I. p. 220 : Latreille, Encyc. Meth. X. p. 190.

Lupa sanguinolenta, Desmarest, Dict. Sci. Nat. XXVIII. p. 224, and Consid. Gen. Crust. p. 99 : Milne Edwards, Hist. Nat. Crust. I. 451 and in Cuvier Règne An. pl. x. fig. 1 : Lucas Hist. Nat. Anim. Art. Crust. p. 101 : Dana, U. S. Expl. Exp. Crust. pt. I. p. 271 : Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 38 : Tozzetti, "Magenta" Crust. p. 68.

Neptunus sanguinolentus, De Haan, Faun. Japon. Crust. p. 38 : A. Milne Edwards, Archiv. du Mus. X. 1858-1861, pp. 319, 339, and in Maillard's l'ile Réunion,

Annexe F. p. 2: Heller, "Novara" Crust. p. 26: Brocchi, Ann. Sci. Nat. (6) II. 1875. Art 2, p. 55, pl. xvi. figs. 83, 84 (*male appendages*): Miers, Cat. New Zealand Crust. p. 26, and Ann. Mag. Nat. Hist. (5) V. 1880, p. 238, and Challenger Brachyura, p. 174: Streets, Bull. U. S. Nat. Mus. VII. 1877, p. 106: Haswell, Cat. Austral. Crust., p. 77: Filhol, Crust. Nouv. Zél., Miss de l'ile Campbell, p. 382. F. Muller, Verh. Naturf. Ges. Basel, VIII. 1886, p. 475: de Man, Archiv. f. Naturges. LIII. i. 1887, p. 328, and in Weber's Zool. Ergebn. Niederl. Ost-Ind. II. 1892, p. 285 and Zool. Jahrb., Syst. etc., VIII. 1894-95, p. 556: Cano, Boll. Soc. Nat. Napol. III. 1889, p. 212: Pfeffer, Mitt. Nathist Mus. Hamburg VII. 1889 (1890), No. 8, p. 6 (*female dimorphism*): J. R. Henderson, Tr. Linn. Soc. Zool. (2) V. 1893, p. 368: Ortmann, Zool. Jahrb., Syst. etc., VII. 1893, p. 75, and in Semon's Forschungsr. (Jena. Denk VIII) Crust. p. 45.

Carapace very broad, little convex, its length in the middle line half its breadth excluding the great lateral spines, finely granular everywhere in the young but only in the anterior half in the adult, crossed transversely by some slightly-raised granular lines—two on the gastric, one on either branchial region—conspicuously marked posteriorly by three large blood-red spots.

Front cut into four sharp and very distinct teeth—not counting the inner supra-orbital angles—of which the middle two are the less prominent and have projecting between and far beyond them the spine-like process of the epistome. Supra-orbital borders cut by 2 fissures into 3 lobes, the angles of the middle lobe not conspicuous.

Antero-lateral borders very long and oblique, cut into 9 teeth including the outer orbital angle) the last of which is about four times as long as any of the others The posterior border, which is smooth, forms a common curve with the postero-lateral borders.

Antero-external angle of merus of external maxillipeds not produced.

Chelipeds in the adult male about $2\frac{2}{3}$ times the length of the carapace, but rather less in the female and young male: the hand is the most massive segment. Arm with 3 or 4 large spines on the anterior (inner) border, but without any on the posterior border. Hand and outer surface of wrist costate, the costæ smooth: both inner and outer angle of wrist strongly spiniform: the palm, which is not, or only slightly, longer than the fingers has two spines dorsally, one being in front of the apex of the wrist-joint, the other just behind the finger-joint.

Legs smooth: a spinule near the far end of the posterior border of the carpus of the first two pairs.

A large species.

In the Indian Museum are 60 specimens, from Penang, Nicobars, east and west coasts of the Peninsula, Ceylon, and Karáchi.

12. *Neptunus pelagicus*, Linn.

Pagurus reidjungan, Rumph, Amboinsch. Rariteitk. I. p. 11 (which also seems to include *N. sanguinolentus*), pl. vii. fig. R.

Cancer pelagicus, Linnæus, Mus. Lud. Ulr. p. 434, and Syst. Nat. (xii. ed.) p. 1042: Forskal, Descr. Anim. p. 89: Fabricius, Ent. Syst. II. p. 447 (part).

Cancer cedo-nulli, Herbst, Krabben, II. ii. 157, pl. xxxix.

Cancer reticulatus, Herbst, Krabben, III. i. 65, pl. *l*.

Portunus pelagicus, Fabricius, Ent. Syst. Suppl. p. 367: Latreille, Hist. Nat. Crust. VI. 16, and Encycl. Meth. X. p. 188: Savigny, Descr. Egypt. pl. iii. fig. 3 (Audouin, Expl. p. 83).

Portunus cedo-nulli, Bosc, Hist. Nat. Crust. I. p. 221.

Lupa pelagica, Desmarest, Dict. Sci. Nat. XXVIII. p. 223 and Consid. Gen. Crust. p. 98, pl. vi. fig. 2: Milne Edwards, Hist. Nat. Crust. I. 450: Lucas, Hist. Nat. Anim. Art. Crust. p. 101, pl. vii. fig. 2: Dana, U. S. Expl. Exp. Crust. pt. I. p. 271: Stimpson, Proc. Acad. Nat. Sci. Philad. 1858, p. 38: Heller, SB. AK. Wien, XLIII. 1861, p. 355: Hilgendorf in v. d. Decken's Reisen Ost-Afr. III. i. p. 77: Tozzetti, 'Magenta' Crust. p. 66, pl. v. fig. 3*a-b*.

Neptunus pelagicus, DeHaan, Faun. Jap. Crust. p. 37, pl. ix, x: Krauss, Sudafr. Crust. p. 23: A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 320, 329, and Nouv. Archiv. du Mus. IV. 1868, p. 70, and IX. 1873, p. 156: Heller, Novara Crust. p. 27: Hess, Archiv. f. Naturges. XXXI. 1865, i. pp. 138, 172: Brocchi, Ann. Sci. Nat. (6) II. 1875, Art. 2, p. 52, pl. xv. fig. 74, 75 (*male appendages*): Miers, Cat. New Zealand Crust. p. 25, and Ann. Mag. Nat. Hist. (4) XVII. 1876, p. 221, and (5) V. 1880, p. 238, and Zool. H.M.S. Alert, pp. 183, 289, and Challenger Brachyura, p. 173: Kossmann, Reise roth Meer. Crust. p. 46: Neumann, Cat. Crust. Heidelb. Mus. p. 24: Hilgendorf, MB. AK. Berl. p. 799: Nauck, Zeits. Wiss. Zool. XXXIV. 1880, p. 62 (*gastric teeth*): de Man, Notes Leyden Mus. II. 1880, p. 183, and Archiv. f. Naturges. LIII. 1887, i. p. 328, and Journ. Linn. Soc., Zool., XXII. 1888, p. 69, and in Weber's Zool. Ergebn. Niederl. Ost.-Ind. II. 1892, p. 284: Haswell, Cat. Austral. Crust. p. 77: Filhol, Crust. Nouv. Zél. p. 381: Cano, Boll. Soc. Nat. Napoli, III. 1889, p. 212: Pfeffer, Mitteil. Nat. Hist. Mus. Hamb. XII. 1889, No. 8, p. 6: A. O. Walker, Journ. Linn. Soc., Zool., XX. 1890, p. 110: J. R. Henderson, Trans. Linn. Soc. Zool., (2) V. 1893, p. 367: Ortmann, Zool. Jahrb., Syst., VII. 1893, p. 74, and in Semon's Forschungsr. (Jena. Denk. VIII.) Crust. p. 45.

? *Neptunus armatus*, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 322, 339, pl. xxxiii. fig. 2: Miers, Zool. H. M. S. Alert, pp. 183, 229: Cano, Boll. Soc. Nat. Napol. III. 1889, p. 212: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 370: Ortmann, Zool. Jahrb. Syst. VII. 1893–94, p. 75.

Neptunus trituberculatus, Miers, Ann. Mag. Nat. Hist., (4) XVII. 1876, p. 221 and (5) V. 1880, p. 238, and Cat. Crust. New Zealand, 1876, p. 25, and Challenger Brachyura, p. 172: Ortmann, Zool. Jahrb. Syst. VII. 1893, p. 74.

Carapace broad, little convex, its length a little more than half its breadth without the great lateral spines, at all ages closely covered with largish miliary granules: two transverse lines on the gastric, one on either branchial region: sometimes two lumps on the cardiac and one on the post-gastric region, these being very variable in size and distinctness.

Front cut into four teeth—not counting the inner angles of the orbit—of which the middle two are small and little prominent, or obsolescent, or even confluent and obsolete: between and far beyond them projects the spine-like process of the epistome. Supra-orbital borders cut by two fissures into three lobes, the outer angle of the middle lobe being usually dentiform.

Antero-lateral and posterior borders and external maxillipeds almost as in the preceding species.

Chelipeds in the adult male more than 3 times, in the female and young male not quite $2\frac{1}{2}$ times the length of the carapace—the hand the most massive segment. Arm with 3 large spines on the anterior (inner) border and with 1 at the far end of the posterior border. Wrist and hand much as in the preceding species, but the costæ are, for the most part, granular, and the hand carries 3 spines two of which stand side by side behind the finger-joint.

Legs as in *N. sanguinolentus*.

Colours in spirit yellowish, the carapace chelipeds and proximal joints of the last pair of legs having the dorsal surface copiously and coarsely reticulated with bluish and purplish green.

A large species.

In the Indian Museum are 46 specimens from all parts of the coasts of the Indian Seas, from Penang to the Persian Gulf, besides 13 from Japan, Hongkong, Australia and Suez.

13. *Neptunus* (*Amphitrite*) *gladiator* (Fabr.).

Portunus gladiator, Fabricius, Ent. Syst. Suppl. p. 368: Bosc, Hist. Nat. Crust. I. p. 219: Latreille, Hist. Nat. Crust. VI. p. 19, and Encycl. Meth. X. p. 189.

Cancer menestho, Herbst, Krabben, III. iii. 34, pl. lv. fig. 3.

Lupea gladiator, Milne Edwards, Hist. Nat. Crust. I. 456.

Amphitrite gladiator, De Haan, Faun. Jap. Crust. p. 39, pl. i. fig. 5: Haswell, Cat. Austral. Crust. p. 84.

Neptunus gladiator, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 330, 339: Richters in Möbius Meeresf. Maurit. p. 152: Muller Verh. Nat. Ges. Basel, VIII. 1886, p. 475: Miers, Challenger Brachyura, p. 177: de Man, Journ. Linn. Soc., Zool., XXII. 1888, p. 69: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 367: Ortmann, Zool. Jahrb. Syst. VII. 1893-94, p. 73.

Amphitrite Haanii, Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 38.

? *Amphitrite media*, Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39 (v. A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 331, 339 and Ortmann, Zool. Jahrb. Syst. VII. 1893-94, p 73).

Carapace depressed, finely subtomentose, its length about two-thirds its breadth without the great lateral spines, its surface broken by low symmetrically disposed sub-regional elevations the summits alone of which are granular.

Front cut into four acute teeth (not counting the inner supra-orbital angles) of which the middle two are the smaller and less prominent and have projecting between them the dentiform process of the epistome. Supra-orbital margin cut by two fissures into three lobes, the outer angle of the middle lobe strongly dentiform.

Antero-lateral and posterior borders much as in the preceding species except that the great lateral spines are only about $2\frac{1}{2}$ times the length of any of the others.

Eyes large, reniform, not concealed to dorsal view by the orbits, which are large and almost entirely dorsal in position.

Antero-external angle of merus of external maxillipeds very strongly produced in a lateral direction.

Chelipeds in the adult male a little over $2\frac{1}{2}$ times the length of the carapace, somewhat shorter in the female—the hand the most massive segment: granular in places, the granules on the upper surface of the arm and under surface of the hand forming sub-squamiform lines. Arm with 4 spines on the anterior (inner) border and 2 near the far end of the posterior border. Wrist and hand costate, the costæ granular. Both inner and outer angle of wrist strongly spiniform, the former very strongly so. Two spines on the hand, one being just in front of the apex of the wrist-joint, the other being a short distance behind the finger-joint: the carina that forms the outer boundary of the lower surface of the hand is very salient.

Legs, like the arm, tomentose in places, but very strongly so along the anterior (inner) border: no spinule on the posterior border of the carpopodites.

The abdomen in the male has remarkably sinuous lateral borders: the 2nd and 3rd abdominal terga in both sexes are very strongly carinated.

Colours in spirit yellow, often with some red markings on edges of carapace and on fingers and on spines of chelipeds.

A species of medium size, adult males having the carapace about 33 millim. long and about 65 millim. broad including the great ateral spines.

In the Indian Museum are 13 specimens from Ceylon, Madras, Sunderbunds, and Mergui.

14. *Neptunus* (*Amphitrite*) *argentatus* (White) A. M. Edw.

["*Amphitrite argentata*, White List. Crust. Brit. Mus. p. 126".]

Neptunus argentatus, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 332, 339, pl. xxxi, fig. 4: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 368.

Neptunus gladiator, var. *argentatus*, Miers, Challenger Brachyura, p. 177: Cano, Boll. Soc. Nat. Napoli. III. 1889, p. 214: Ortmann, Zool. Jahrb. Syst., VII. 1893-94, p. 73.

Very like *N. gladiator* but easily distinguished by the following characters :—

(1) the carapace is longer and narrower, its length being three-fourths its breadth without the great lateral spines; and its subregional convexities are in much stronger relief and much better defined :

(2) the median frontal teeth are smaller and less prominent, and the outer angle of the middle lobe of the supra-orbital margin is less acute :

(3) the crests of the outer surface of the palm and immobile finger and of the third abdominal segment are not only more salient and trenchant, but also have a curious silvery or coppery pearly sheen :

(4) the chelipeds are shorter; and there is a dark round spot near the tip of the dactylus of the last pair of legs.

It is a very much smaller species; only one of numerous egg-laden females in the Indian Museum has the carapace more than 20 millim. long and 30 millim. broad (including spines). Specimens of *N. gladiator* of this size are obviously immature.

In the Indian Museum are 63 specimens from the Andamans, Mergui (Marine Survey), Arakan coast, Ganjam coast, Ceylon, and Malabar coast. Nearly half the specimens are recorded from depths of 18 to 33 fathoms.

15. *Neptunus* (*Amphitrite*) *argentatus* var. *glareosus*.

In this variety the carapace is even narrower and more elongate, its subregional convexities are hardly less salient and well defined than those of *N. tuberculosus*, and its surface is almost free of tomentum. The carina of the 3rd abdominal tergum is about twice as prominent as it is in the typical form, having the shape of a prominent foliaceous lobe. The dorsal surface of the body and chelipeds is profusely speckled.

26 specimens, including egg-laden females, were dredged from a bottom of sand and stones off the Andamans at 55 fathoms.

16. *Neptunus* (*Amphitrite*) *petreus*, n. sp.

This species differs from *N. gladiator*, and approaches *N. spinicarpus* Stimpson, in the enormous development of the spine at the inner angle of the wrist.

It will be sufficient to point out the characters that distinguish it from *N. gladiator*, of which it may prove to be only a variety.

The length of the carapace is nearly $\frac{3}{4}$ the breadth without the lateral spines. The frontal teeth are blunt and the epistome is not

produced. The last spine of the antero-lateral border is hardly twice the length of any of the others. The costæ of the wrist and hand are low, and the spine at the inner angle of the wrist is about two-thirds the length of the palm.

A single male specimen from the Pedro Shoal north of the Laccadive Islands. The carapace is 12 millim. long and 18 millim. broad including the spines.

17. *Neptunus* (*Hellenus*) *hastatoides* (Fabr.) A. M. Edw.

Portunus hastatoides, Fabricius, Ent. Syst. Suppl. p. 368.

Cancer hastatus, Herbst, Krabben, III. iii. 3, pl. lv. fig. 1.

Amphitrite hastatoides, De Haan, Faun. Jap. Crust. p. 39, pl. i. fig. 3: Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 38.

Neptunus hastatoides, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 332, 338: Miers, Zool. H. M. S. Alert, pp. 183, 229, and Challenger Brachyura, p. 175: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 368: Ortmann, Zool. Jahrb., Syst., VII. 1893-94, p. 74: de Man, Zool. Jahrb., Syst., VIII. 1894-95, p. 557.

Carapace very flat, its length in the middle line is about two-thirds its breadth not counting the great lateral spines, finely subtomentose, its surface symmetrically broken up into low subregional convexities the summits alone of which are granular.

Front slightly prominent beyond the inner supra-orbital angles and cut into four teeth, the middle two of which are very much narrower and acuter than, and are usually as prominent as or even more prominent than, the others: the inconspicuous apical prolongation of the epistome can be seen between, but does not project beyond, the middle teeth. Supra-orbital border cut by two fissures into three lobes, the outer angle of the middle lobe being dentiform.

Antero-lateral borders of moderate length and obliquity, cut into 9 teeth (including the outer angle of the orbit) the last of which is less than three times the length of any of the others in adults, but is longer in the young. The finely-beaded posterior border is practically straight, and forms a sharp or claw-like angle of junction with the postero-lateral borders.

Eyes large and reniform, not concealed by the entirely-dorsal orbits. The antero-lateral angle of the merus of the external maxillipeds is acutely produced in a lateral direction.

Chelipeds in the adult male slightly more than twice the length of the carapace, finely subtomentose, the hands little if at all less massive than the arm. 3 or 4 spines on the anterior (inner) border of the arm, 2 near the far end of the posterior border: hand and upper surface of wrist costate, the costæ granular: inner and outer angles of wrist strongly spiniform: two spines on the hand, one being in front of the apex of the wrist-joint the other just behind the finger-joint.

Legs more or less subtomentose, quite unarmed, but the after half of the distal border of the merus of the last pair is finely serrulate.

The 3rd segment of the abdomen of both sexes is strongly and sharply carinate: the length of the 6th segment of the male is nearly twice its greatest breadth.

Colours of good fresh spirit specimens, greenish yellow more or less mottled: tip of dactylus of last pair of legs blackish brown.

A small species: egg-laden females have the carapace 22 millim. long and 42 millim. broad including spines.

In the Indian Museum are 137 specimens from the Madras coast, Andamans, G. of Martaban, Penang, and Persian Gulf, besides 6 from Hongkong.

18. *Neptunus* (*Hellenus*) *andersoni*, de Man.

Neptunus andersoni, de Man, Journ. Linn. Soc., Zool., XXII. 1888, p. 70, pl. iv. figs. 3, 4: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 368.

This species differs from *N. hastatoides* in the following characters:—

The carapace is more convex, the subregional elevations, instead of being low and ill-defined, are sharply-defined tubercles, and the oblique ridge that traverses either epibranchial region is particularly salient. The front is more prominent beyond the inner supra-orbital angles and the two middle teeth are less prominent than the others. The posterior angles of the carapace are much less acute. The antero-external angle of the merus of the external maxillipeds is less produced in a lateral direction. The chelipeds are shorter, being less than twice the length of the carapace in the male, and the costæ of the wrist and hand are smooth. The 6th segment of the male abdomen is less elongate than in *N. hastatoides*.

The colour of good fresh spirit specimens is biscuit yellow without any mottling or marking.

In the Indian Museum are 4 specimens from the Persian Gulf.

19. *Neptunus* (*Hellenus*) *spinipes*, Miers.

Neptunus spinipes, Miers, Challenger Brachyura, p. 178, pl. xv. fig. 1.

This species has a strong superficial resemblance to *N. hastatoides*, but is easily distinguished (1) by the more convex carapace (2) by the non-fissured supra-orbital border (3) by the form of the merus of the external maxillipeds which has its antero-external angle rounded *not* produced laterally (4) by the spine on the posterior border of the merus of the last pair of legs, and (5) by the position of the anterior spine of the hand, which is placed a good way back instead of immediately behind the finger-joint.

Carapace appreciably convex, but shaped and sculptured as in *N. hastatoides*. Front very distinctly prominent beyond the inner supra-orbital angles and beyond the epistome, cut into four teeth of which the middle two are somewhat smaller narrower and less prominent than the others.

The supra-orbital border is not fissured, but the orbits otherwise, and the eyes, are as in *N. hastatoides*.

Antero-lateral border cut into 9 teeth (including the outer orbital angle) of which the first 2 or 3 are very small and inconspicuous and the next 5 or 6 small, the last being a spike usually from a third to half the breadth of the carapace proper in length. The posterior border is straight and forms an acutely dentiform angle of junction with the postero-lateral borders.

The merus of the external maxillipeds is narrow and has its antero-external angle simply rounded, not produced laterally.

The chelipeds in the adult male are rather more than $2\frac{1}{3}$ times the length of the carapace, but are otherwise similar to those of *N. hastatoides*, except that the second spine of the hand is placed a good way behind the finger-joint.

There is a spine near the far end of the posterior border of the merus of the last pair of legs.

The 2nd and 3rd abdominal terga in both sexes are transversely carinate, the carinæ being of no great depth but very elegantly denticulate. The length of the 6th tergum of the male is not much more than its greatest breadth.

A small species: egg-laden females are 6·5 millim. long and 16 millim. broad including spines, but males are nearly twice this size.

In the Indian Museum are 66 specimens, from the Madras coast, Andamans, G. of Martaban, Arakan coast, and Muscat. Most of them come from over 20 fathoms.

The specimen figured by Miers has abnormally short lateral epibranchial spines.

20. *Neptunus* (*Hellenus*) *longispinosus* (Dana).

Amphitrite longispinosa, Dana, Proc. Ac. Nat. Sci. Philad. 1852, p. 84, and U. S. Expl. Exp. Crust. pt. I. p. 277, pl. xvii. figs. 2 *a–c*.

Neptunus longispinosus, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 337, 339.

Xiphonectes longispinosus, Miers, Challenger Brachyura, p. 183: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 370.

Amphitrite vigilans, Dana, Proc. Ac. Nat. Sci. Philad. 1852, p. 84, and U. S. Expl. Exp. Crust. pt. I. p. 278, pl. xvii. figs. 3 *a-d*.

Neptunus vigilans, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 336, 339.

and in Maillard's l'ile Réunion, Annexe F. p. 2: Richters in Möbius, Meeresf. Maurit. p. 152: var. *obtusidentatus*, Miers. Zool. H. M. S. Alert, p. 538, pl. xlviii. fig. A.

Xiphonectes leptocheles, A. Milne Edwards, Nouv. Archiv. du Mus. IX. 1873, p. 159, pl. iv. fig. 1.

Carapace flattish, its length is from $\frac{3}{5}$ to $\frac{3}{4}$ its breadth without the spines, its surface is subtomentose and is cut up into well defined sub-regional elevations, the convexities of which are granular.

Front prominent beyond the hardly independent inner supra-orbital angles and beyond the epistome, cut into four usually acute, triangular teeth—the middle two small and receding, the outer ones very large and prominent. Supra-orbital margin cut by 2 fissures.

Antero-lateral borders moderately oblique, armed with a variable number of small and inconspicuous teeth, and ending in a lateral epibranchial spine that is about half the breadth of the carapace in length. The number of teeth, including the outer orbital angle and the lateral spine, varies from 6 in the young to 9 in the adult, though there are adults with less than 9.

The posterior border is nearly straight and makes a dentiform or sub-dentiform angle of junction with the postero-lateral borders.

Orbits dorsal not concealing the large reniform eyes. Antero-external angle of merus of external maxillipeds not produced in a lateral direction.

Chelipeds of male about $2\frac{1}{2}$ times the length of the carapace, granular, the granules being in places sub-squamiform, the hand as a whole not less massive than the arm: 3 or 4 spines on the anterior (inner) border of the arm and one at the far end of the posterior border: inner and outer angles of wrist spiniform: hand and fingers costate, the costæ granular, there are 3 spines on the hand, one being in front of the apex of the wrist-joint, the other two standing side by side (the inner the larger) in the distal half of the upper surface.

First three pair of legs slender.

2nd and 3rd abdominal terga transversely carinate, the carinæ not being very prominent: the sides of the male abdomen sinuous.

A small species: egg-laden females have the carapace 9 millim. long and 20 millim. broad including the spines, but many males are a good deal larger, and, on the other hand, egg-laden females are occasionally much smaller.

Colours of good fresh spirit specimens yellow, with much brown and green mottling on dorsal surface of carapace, chelipeds and legs.

In the Indian Museum are 81 specimens from the Andamans, Maldives, and Persian Gulf, besides 2 from Mauritius.

For a long time I thought I could recognize three distinct species differing from one another (1) in relative length of carapace, (2) in relative length and in sculpture of chelipeds, especially of the hands, and (3) in the degree of prominence of the inner supra-orbital angle. But after a careful examination of 83 specimens I find that all these differences are inconstant, as Miers has already said.

21. *Neptunus* (*Hellenus*) *tenuipes*, De Haan.

Amphitrite tenuipes, De Haan, Faun. Japon. Crust. p. 39, pl. i. fig. 4: Haswell, Cat. Austral. Crust. p. 83.

Neptunus tenuipes, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 335, 339: Thallwitz, Abh. Zool. Mus. Dresden, 1890-91, No. 3. p. 48: Ortmann, Zool. Jahrb., Syst. VII. 1893, p. 74.

Carapace little convex, its length about $\frac{3}{5}$ its breadth without the spines, its surface sufficiently tomentose to appear almost smooth, but when denuded it is found to be cut up into well defined sub-regional elevations the convexities alone of which are granular.

Front prominent beyond the inner supra-orbital angles and beyond the epistome, cut into *three* bluntly triangular teeth, of which the middle one is slightly the smaller and less prominent. Supra-orbital border cut by two fissures.

Antero-lateral border cut into 9 close-set teeth (including the outer orbital angle) of which the last is about three times as long as any of the others. The posterior border is slightly curved and meets the postero-lateral borders at a well-marked angle, which is sometimes slightly turned up.

Eyes large, reniform, not concealed by the almost completely dorsal orbits. Outer angle of merus of external maxillipeds not produced laterally.

Chelipeds in the adult male about $2\frac{1}{4}$ times the length of the carapace, the hand being the most massive segment. Arm with 3 spines on the anterior (inner) border and 1 at the far end of the outer border: both inner and outer angle of wrist spiniform, the inner most conspicuously so. Hand costate, the costæ serrulate; armed with 2 spines, one being in front of the apex of the wrist-joint, the other slightly behind the finger-joint.

First 3 pair of legs slender, the first pair hardly shorter than the chelipeds.

Abdomen of male sinuous.

In the Indian Museum are 14 specimens from the Andamans.

22. *Neptunus* (*Hellenus*) *tuberculosus*, A. M. Edw.

Neptunus tuberculosus, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 333, 339,

pl. xxxi. fig. 5: Miers, Challenger Brachyura, p. 176: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 369.

Carapace flat, its length in the middle line between ⅔ and ¾ its breadth without the great lateral spines, its surface rough, granular, and symmetrically puckered or tubercled.

Front prominent beyond the inner supra-orbital angles and beyond the epistome, cut into four bluntly triangular teeth of nearly equal size, of which the middle two are the more prominent. Supra-orbital margin cut by two fissures.

Antero-lateral borders rather long, moderately oblique, cut into 9 teeth (including the outer orbital angle) the last of which is about 3 times longer than any of the others: the teeth are often rather irregular. Posterior border nearly straight and forming a dentiform angle of junction with the postero-lateral borders.

The orbits are not completely dorsal. The merus of the external maxillipeds is elongate, but has not the antero-external angle produced laterally.

Chelipeds of the male a little over twice the length of the carapace, granular, the hand the most massive joint. 3, occasionally 4, teeth on the anterior (inner) border of the arm, and 1 at the far end of the posterior border. Hand and upper surface of wrist costate, the costæ granular: both inner and outer angle of wrist spiniform: two spinules, which are often blunt and inconspicuous, on the hand in the usual position: fingers a good deal shorter than the palm.

Legs unarmed: sternum granular.

A small species; ovigerous females have the carapace 11 millim. long and 21 millim. broad including spines.

Colours of good fresh spirit specimens yellow, profusely mottled and speckled with brown green and purple.

In the Indian Museum are 43 specimens from the Andamans, off Ceylon 28 fathoms, and the Persian Gulf.

23. *Neptunus* (*Hellenus*) *Brockii*, de Man.

Neptunus brockii, de Man, Archiv. f. Naturges. LIII. 1887, i. p. 328, pl. xiii. fig. 4.

Closely resembles *N. tuberculosus*, but is distinguished by the following characters, specimens of the same size and sex being compared:—

(1) the front is not cut into teeth, but forms a simple lamina that projects slightly beyond the inner supra-orbital angles;

(2) the surface of the carapace is cut up into low granular subregional elevations, but the tubercles characteristic of *N. tuberculosus* are absent:

(3) there are no spines on the hand. [But there are specimens of *N. tuberculosus* in which the spines of the hand are blunt and inconspicuous].

In the Indian Museum are two males from the Andamans. After comparing these with 43 specimens, of both sexes and all sizes, of *N. tuberculosus* I think they should be kept distinct.

24. *Neptunus* (*Lupocycloporus*) *Whitei.*

Achelous Whitei, A. Milne Edwards, Archiv. n Mus. X. 1861, pp. 343, 347, pl xxxi. fig. 6: A. O. Walker, Journ. Linn. Soc., Zool., XX. 1886–90, p. 110: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 371.

Neptunus Whitei, Miers, Challenger Brachyura, p. 171.

Carapace fairly convex, its length about $\frac{2}{3}$ its breadth without the spines, its surface finely pilose, but not sufficiently so to conceal a characteristic series of transverse finely-beaded ridges, of which there are 3 on the gastric, 3 on either branchial region, and one on the cardiac.

The front, which is prominent beyond the bluntly dentiform inner supra-orbital angles and beyond the epistome, is cut into four very definite teeth of nearly equal size, of which the middle two are slightly the more prominent. Supra-orbital border cut by two fissures.

Antero-lateral borders moderately oblique, cut into nine regular teeth (including the outer orbital angle) of which the last is barely twice the length of the others in the adult, though in the young it is a good deal longer. Posterior border finely beaded, and forming a common curve with the postero-lateral borders.

Orbits large, almost entirely dorsal in position, not concealing the large reniform eyes from dorsal view.

Chelipeds nearly 3 times the length of the carapace in the adult male, more or less covered with squamiform granules, the wrist and hand much slenderer than the arm. 4 to 6 spines on the anterior border of the arm; 2 on the posterior border, one being terminal the other submedian. Hand and upper surface of wrist costate, the costæ granular: both inner and outer angle of wrist spiniform: at least 3 spines on the hand, one being in front of the apex of the wrist-joint and two side by side some distance behind the finger-joint. Fingers slender, compressed, ending in long needle-like points, the tips being slightly but very characteristically bent outwards; otherwise the dactylus is nearly straight and the immobile finger gently upcurved.

Legs, like the chelipeds, more or less pubescent: there is a spine near the far end of the posterior border of the merus of the last pair.

Abdomen of male pointed: in both sexes the 2nd and 3rd abdominal terga are transversely, but not very strongly, carinate.

The largest specimen (male) in the Indian Museum has the carapace 24 millim. long and 44 millim. broad including the spines, but there are numerous egg-laden females that are much smaller than this.

In the Indian Museum are 33 specimens, from the Madras coast and the Andamans, besides one of the Challenger duplicates from New-Guinea.

25. *? Neptunus (Lupocycloporus) gracilimanus*, (Stimpson).

? Amphitrite gracilimanus, Stimpson, Proc. Acad. Nat. Sci. Philad. 1858, p. 38.

? Neptunus gracilimanus, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 336, 339.

This species, if my identification be correct, though much like *N. whitei*, is easily distinguished by the following difference:—

(1) the transverse beaded ridges of the carapace are much less distinct and are less numerous: they are six in number, the anterior gastric one being absent: the carapace also is decidedly more convex:

(2) the shape of the front is entirely different, for instead of being cut into four subacute teeth of nearly equal size, it is cut into four lobes of which the outer ones are broad and shallow while the middle two are narrow and dentiform: the inner supra-orbital angles also are much blunter:

(3) the last spine of the antero-lateral border is always in adults more than twice the length of any of the others:

(4) both the spines on the posterior border of the arm are near the far end of that border:

(5) the fingers are incurved, and the bending outwards at tip is inappreciable:

(6) it is a much smaller species: the largest egg-laden female has the carapace 11 millim. long and 21 millim. broad including the spines, and there are numerous egg-laden females much smaller than this.

The differences are constant throughout the whole series of specimens of both sexes.

In the Indian Museum are 45 specimens from the Andamans, G. of Martaban, Arakan coast, and from the east coast of the Peninsula at 15–35 fms.

26. *Neptunus (Achelous) granulatus* (Edw.) A. M. Edw.

Lupea granulata, Milne Edwards, Hist. Nat. Crust. I. 454.

Amphitrite gladiator, De Haan, Faun. Jap. Crust. p. 65, pl. xviii. fig. 1.

Amphitrite speciosa, Dana, Proc. Ac. Nat. Sci. Philad. 1852, p. 84, and U. S. Expl. Exp., Crust. pt. I. p. 276, pl. xvii. fig. 1.

Achelous granulatus, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 344, 347, and in Maillard's l'ile Réunion, Annexe F. p. 2, and Nouv. Archiv. du Mus, IV.

1868, p. 70 and IX. 1873, p. 161: Streets, Bull. U. S. Nat. Mus. VII. 1877. p. 109: Miers, Phil. Trans. Roy. Soc. Vol. 168, 1879, p. 488, and Zool. H. M. S. Alert, pp. 230, 538: Richters in Möbius Meeresf. Maurit. p. 152: Muller, Verh. Nat. Ges. Basel VIII. 1886, p. 475: de Man, Archiv. f. Naturges. LIII. 1887, i. p. 331: Cano. Boll. Soc. Nat. Napol. III. 1889, p. 214: J. R. Henderson, Trans. Linn. Soc. Zool. (2) V. 1893, p. 371.

Neptunus (*Achelous*) *granulatus*, Miers, Challenger Brachyura, p. 180: Thallwitz, Abh. Zool. Mus. Dresden, 1890-91, No. 3, p. 48: Ortmann, Zool. Jahrb Syst. VII. 1893-94, p. 72, and in Semon's Zool. Forschungsr. (Jena. Denk. VIII.) Crust. p. 45: de Man, Zool. Jahrb. Syst. VIII. 1894-95 p. 558.

Carapace depressed, a little over three-quarters as long as broad, finely subtomentose, its surface cut up into well-defined sub-regional elevations the convexities of which are granular.

Front slightly receding, slightly prominent beyond the blunt inner supra-orbital angles and beyond the epistome, cut into four lobes (not counting the inner supra-orbital angles) of which the middle two are the smaller and less prominent and are often almost coalescent. Supra-orbital border with two distinct fissures.

Antero-lateral borders very slightly oblique, cut into 9 teeth (including the outer orbital angle) of which the last is but little bigger than any of the others which it quite resembles in shape. The posterior border forms a common curve with the postero-lateral borders.

Orbits not completely dorsal: eyes not very large. Antero-external angle of merus of external maxillipeds considerably produced in a lateral direction.

Chelipeds in the male about $2\frac{1}{2}$ times the length of the carapace, more or less granular, the hand not or little less massive than the arm. Arm with 4 or 5 spines on the anterior border, and with 2 on the posterior border—one submedian the other subterminal: outer border of wrist subcarinate up to a terminal spinule, inner angle of wrist strongly spiniform: hand costate, with a blunt spinule in front of the apex of the wrist-joint and a sharp spine some distance behind the finger-joint.

First three pair of legs rather slender.

Third abdominal tergum in both sexes strongly and sharply carinate.

Colours of good fresh spirit specimens pale yellow, the dorsal surface of the carapace and chelipeds profusely mottled and speckled with grey and dark red.

A small species: egg-laden females have the carapace 12 millim. long and 15 millim. in total breadth, but adult males are half again as big.

In the Indian Museum are 140 specimens from the Andamans and Nicobars, Persian Gulf, Mergui, Ceylon, and Malabar coast, (besides 3 from Mauritius and 2 from Upolu).

27. *Neptunus* (*Achelous*) *orbicularis*, Richters.

Achelous orbicularis, Richters in Möbius Meeresf. Maurit. p. 153, pl. xvi. figs. 14, 15: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 371.

Differs from *Neptunus* (*Achelous*) *granulatus* in the following characters:—

(1) the carapace is extremely thin and depressed, is perfectly smooth—except for faint marginal depressions—and bare, and is subcircular in shape, its length being $\frac{9}{7}$ its breadth:

(2) the outer fissure of the supra-orbital margin is obsolete, and the inner fissure is represented by a closed suture:

(3) the antero-lateral borders are cut into 9 teeth which gradually *decrease* in size from before backwards:

(4) the chelipeds in the male are about twice the length of the carapace, their surface is non-granular, and the posterior border of the arm is more expanded than in *N. granulatus*.

In the Indian Museum are 6 specimens from the Pedro Shoal (Laccadives) and 2, including an egg-laden female, from the Andamans.

CHARYBDIS, De Haan (GONIOSOMA, A. Milne Edwards).

Charybdis and *Oceanus*. De Haan, Faun. Japon. Crust. pp. 10, 9.

Goniosoma, A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV. 1860, p. 263, and Archiv. du Mus. X. 1861, p. 367: Miers, Challenger Brachyura, p. 189.

Charybdis, M. J. Rathbun, Proc. Biol. Soc. Washington, XI. 1897, p. 161.

Carapace hexagonal, moderately broad, depressed or little convex, usually with transverse granular ridges at any rate in its anterior half.

Front proper (not including the inner supra-orbital angles from which it is distinctly separated) usually between a fourth and a third the greatest breadth of the carapace, cut into six lobes or teeth (exclusive of the supra-orbital angles).

Antero-lateral borders oblique, moderately arched, longer than the postero-lateral, cut into from 5 to 7—usually *six*—teeth including the outer orbital angles.

Upper border of orbit with two notches or fissures; there is a gap in the lower border, and the inner angle of this border is usually dentiform and moderately prominent. The antennules fold transversely.

Basal antenna-joint short and broad; its outer angle forms a lobule which usually fills the orbital hiatus and meets the front, excluding the flagellum from the hiatus.

Epistome sufficiently long: buccal cavern squarish, broader than long: the efferent branchial canals usually well defined.

Chelipeds massive, longer than any of the legs, usually a little unequal: arm with spines; the inner angle of the wrist strongly spiniform, the outer angle usually armed with spinules; palm prismatic or tumid, generally with costæ and some definitely placed spines; fingers strong, usually about as long as palm, strongly toothed.

Legs compressed: in the last pair the merus and carpus are shortened and broadened (the merus usually having a spine at the far end of the posterior border) and the propodite and dactylus typically foliaceous for swimming.

The abdomen is as in *Neptunus*.

Although the name *Charybdis* has the priority, and although I cannot admit that anything short of absolute identity—letter for letter—justifies any charge of "preoccupation," I regret to discard a name that, like *Goniosoma*, has been in use without any shadow of misunderstanding, for nearly 40 years.

I do so only because I believe that *Goniosoma*, if the name be accepted, might with perfect propriety be merged again in *Thalamita*, and because, in any case, the name *Goniosoma* may conveniently be used for a subgenus.

I agree with Ortmann that *Thalamonyx* may quite reasonably be regarded as a subgenus of *Charybdis*, but for mere convenience I should prefer to subdivide the latter genus into three sections, or subgenera, characterized as follows:—

I. The lobule at the external angle of the basal antenna-joint joins the front and completely excludes the flagellum from the orbital hiatus. The posterior angles of the carapace may be accented or not, but the line that bounds the dorsum of the carapace posteriorly forms a curve with the postero-lateral borders. The four median teeth of the front are not very dissimilar from the two outermost on either side. No spine on the posterior border of the arm ..... GONIOSOMA.

II. The lobule at the external angle of the basal antenna-joint is as in *Goniosoma*; but the posterior border of the dorsum of the carapace is straight and forms a well-marked dog's-eared angle of junction with the postero-lateral borders. The four median frontal teeth are broad and truncated. A spine at the end of the posterior border of the arm ..... GONIOHELLENUS.

III. The lobule at the external angle of the basal antenna-joint does not nearly touch the front, so that the flagellum stands in the upper part of the orbital hiatus. The posterior border of the dorsum of the carapace is straight and forms either an angular junction, or a curve, with the postero-lateral borders. The four

median frontal teeth are larger and broader than the two outermost pairs. A spine at the end of the posterior border of the arm may be present, or not..... GONIONEPTUNUS.

Key to the Indian species of the genus Charybdis (=Goniosoma.)

I. The antennal flagellum is completely excluded from the orbital hiatus: the ridge that bounds the dorsum of the carapace posteriorly forms a curve with the postero-lateral borders: no spine on posterior border of arm (*Goniosoma*):—

A. No distinct transverse ridges on the carapace *behind the level of the last spine* of the antero-lateral borders:—

1. Not more than three *large* spines on the anterior border of the arm: the orbits have no decided dorsal inclination and their major diameter is never more than one-third the width of the interorbital space:—

a. First spine of antero-lateral border anteriorly truncated and notched: sixth abdominal tergum of male with curved and gradually convergent sides .... *G. cruciferum.*

b. First spine of antero-lateral border obliquely truncated with the inner angle acute: sixth abdominal tergum of male with curved and gradually-convergent sides: *epibranchial regions extremely tumid dorsally* .... *G. Rivers-Andersoni.*

c. First spine of antero-lateral border acute: the sides of the sixth abdominal tergum of male parallel or slightly divergent in two-thirds or more of their extent:—

i. *An acute spine on the posterior border of* carpus *of last pair of legs* .... *G. merguiense.*

ii. *A sharply dentiform lobule at the* outer *end of the lower border of the orbit* ..... *G. quadrimaculatum.*

iii. The major diameter of the true orbital cavity *is barely a fourth* the width of the interorbital space .... *G. annulatum.*

2. Four or more *large* spines on the anterior border of the arm: the orbits have a strong dorsal inclination and their major

diameter is nearly half the width of the interorbital space: first tooth of antero-lateral border anteriorly truncated and notched ..... *G. miles.*

B. A transverse ridge on the cardiac region, as well as one or two in the posterior half of either branchial region:—

1. Two additional ridges in the posterior half of either branchial region; all the spines of the antero-lateral border well developed:—

a. Carapace moderately broad: first spine of antero-lateral border truncated, the last not enlarged: orbits without dorsal inclination: chelipeds strongly granular and nodular *G. natator.*

b. Carapace very broad: last spine of the antero-lateral border twice as long as any of the others: orbits with strong dorsal inclination: *a stout tooth on the lobule of the basal antenna-joint* ..... *G. variegatum.*

2. One additional ridge on either branchial region: *second spine of antero-lateral border rudimentary*..... *G. orientale.*

C. A transverse ridge on the cardiac region, but none on the posterior half of the branchial region:—

1. Carapace flat: 3 spines on anterior border of arm, 5 on upper surface of hand: sides of 6th abdominal tergum of male curved and gradually convergent ..... *G. affine.*

2. Carapace convex: 2 (hardly ever 3) spines on anterior border of arm:—

a. Carapace about two-thirds as long as broad: 3 spines on the hand: sides of 6th abdominal tergum of male parallel for half their extent *G. callianassa.*

b. Carapace about four-fifths as long as broad: 2 spines on the hand: sides of 6th abdominal tergum of male curved: the two middle frontal teeth remarkably prominent *G. rostratum.*

II. Antennal flagellum completely excluded from orbital hiatus: posterior border of dorsum of carapace straight and forming a dog's-eared angular junction with the postero-lateral borders: the posterior border of the arm ends in a spine (*Goniohellenus*):—

A. Last spine of the antero-lateral border smaller than any of the others ..... *G. ornatus.*

B. Last spine of the antero-lateral border far larger than any of the others ..... *G. hoplites.*

III. The lobular process of the basal antenna-joint does not nearly touch the front, so that the flagellum stands in the upper part of the orbital hiatus (*Gonioneptunus*):—

A. Posterior border of dorsum of carapace forming an angular junction with the postero-lateral borders: the posterior border of the arm ends in a spine:—

1. Transverse ridges of carapace faint: a large red impermanent spot on either branchial region ..... *G. truncatus.*

2. Transverse ridges of carapace prominent: a persistent small dark brown spot on either branchial region ..... *G. bimaculatus.*

B. Posterior border of dorsum of carapace forming a curve with the postero-lateral borders: no spine on the posterior border of the arm: carapace little transverse, the extent of the fronto-orbital border nearly equal to the greatest breadth of the carapace ..... *G. investigatoris.*

[Besides the species mentioned in the above Key, other two, which I have not seen, are included in the Indian Fauna by other authors. They are *G. erythrodactylum* (Lamk.) and *G. sexdentatum* (Herbst) A. M. E.

G. erythrodactylum is recognized, according to A. Milne Edwards, by having seven teeth, of which the second and fourth are rudimentary, on the antero-lateral borders.

G. sexdentatum, A. Milne Edwards, if not of Herbst, is very probably the same as de Man's *G. merguiense*.]

28. *Charybdis* (*Goniosoma*) *crucifera*, (Fabr.) A. M. Edw.

Rumph, Amboinsche Rariteitk. pl. VI. fig. P.

Cancer sexdentatus, Herbst, Krabben pl. viii. fig. 53 (1790).

Cancer cruciatus, Herbst, Krabben pl. II. V. 155, pl. xxxviii. fig. 1 (1794.)

Portunus crucifer, Fabricius, Ent. Syst. Suppl. p. 364 (1798); Bosc, Hist. Nat. Crust. I. p 218: Latreille, Hist. Nat. Crust. VI. p. 14 and Encycl. Meth. X. p. 191.

Thalamita crucifera, Milne Edwards, Hist. Nat. Crust. I. 462: Lucas, Hist. Nat. Anim. Art. Crust. p. 104: Haswell, Cat. Austral. Crust. p. 81.

Oceanus crucifer, De Haan, Faun. Japon. Crust. p. 40.

Charybdis crucifera, Dana, U. S. Expl. Exp. Crust. pt. I. p. 286, pl. xvii. fig. 11 *a–c*: Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39.

Goniosoma cruciferum, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 371, 385: Tozzetti, "Magenta" Crust. p. 82, pl. vi. fig. 2 *a–g*: Nauck, Zeits. Wiss. Zool. XXXIV. 1880, p. 61, pl. i. fig. 27. (*gastric teeth*): Muller, Ver. Ges. Nat. Basel, VIII. 1886. p. 475: Miers, "Challenger" Brachyura p. 191: de Man, Archiv. f. Naturges. LIII. 1887, I. p. 334, and Journ. Linn. Soc. Zool., XXII. 1887,

1888, p. 79, pl. v. fig. i, and Zool. Jahrb., Syst., VIII. 1895, p. 559: Cano, Boll. Soc. Nat. Napol. III. 1889, p. 218: Walker, Journ. Linn. Soc., Zool., XX. 1886–90, p. 110: Ortmann, Zool. Jahrb., Syst., VII. 1893–94, p. 81: Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 374.

Carapace not distinctly pilose, about two-thirds as long as broad, slightly convex, nearly smooth to the naked eye, the regions ill-defined. A finely granular curved line—broken on the gastric region—traverses it between the last spines of either antero-lateral border, and two similar lines—the anterior widely broken in the middle—cross the anterior part of the gastric region: these are the only ridges on the carapace, and they become faint with age.

The front is rather deeply cut into six prominent regular blunt-pointed teeth, *not* including the inner supra-orbital angles, none of which project much beyond the others.

The antero-lateral borders are cut into six teeth including the outer orbital angles, of which the first is truncated and notched or bifid, the last is almost spine-like but is little more salient than the others, while the other four are broad anteriorly-acuminate lobes.

The posterior border of the dorsal surface of the carapace forms a curve with the postero-lateral borders.

The orbits have but little dorsal inclination: the major diameter of their cavity is a third the width of the inter-orbital space: neither the inner angle nor the lobule at the outer end of their lower border are dentiform, though the latter lobule is well defined.

The lobule at the antero-external angle of the basal antenna-joint has a ridge, but not a tooth.

The chelipeds are nearly $2\frac{1}{2}$ times the length of the carapace (in the male) and except for definitely placed costæ and spines are smooth: the hands are a little unequal in size. The arm has three enlarged spines on the anterior (inner) border and a spinule at the far end of the inferior border, but the posterior border is unarmed. The wrist has the inner angle strongly spiniform and has three spinules and some smooth ridges on the outer surface. The hands are tumid but not inflated: they are 5-costate and have 4 spines on the upper surface. In both hands the fingers, which are strongly toothed, are as long as their palm.

In the last pair of legs the merus is about three-fourths as long as broad and has a spine at the far end of the posterior border; the carpus is unarmed, and there are one or two inconspicuous denticles near the far end of the posterior border of the propodite.

The abdomen in both sexes has the 2nd and 3rd terga bluntly carinate: in the male the 6th tergum is much broader than long and has curved and gradually convergent sides.

In spirit the gastric region is purplish brown with a large yellow cross.

Size large: good specimens in the Indian Museum have the carapace 65 millim. in extreme length and 95 millim. in extreme breadth.

29. *Charybdis* (*Goniosoma*) *Rivers-Andersoni*, n. sp.

Very closely related to *C. crucifera*, from which it only differs in coloration, in having the epibranchial regions most remarkably swollen above the general dorsal surface of the carapace, in having the frontal teeth very acute, the first tooth of the antero-lateral border not emarginate, and the transverse ridges of the carapace even more obscure.

Carapace perfectly free from pubescence, smooth and polished; its length is a little more than two-thirds its breadth; the gastric region is slightly tumid and the epibranchial regions are very strongly tumid above the rest of its surface. A fine and very faint strongly-arched line crosses the carapace between the last spine of either antero-lateral border, and a still fainter one crosses the gastric region anteriorly: these are the only lines on the carapace and are as faint in the young as in the adult.

Front cut into 8 acute teeth—*including* the inner supra-orbital angles—arranged in four distinct pairs, the outer pair on either side being almost spine-like.

Antero-lateral borders quite like those of *C. crucifera*, except that the first tooth is obliquely truncated with the inner angle very acute.

Posterior border curved as in *C. crucifera*.

Inner angle of lower border acutely dentiform: the orbits otherwise as in *C. crucifera*.

Chelipeds exactly as in *C. crucifera* except that the hands are less inclined to be tumid.

Last pair of legs as in *C. crucifera* except that the merus is hardly two-thirds as broad as long.

Abdomen in both sexes as in *C. crucifera*.

Colours in spirit: salmon-red, the frontal and antero-lateral borders and the boundary between the branchial and hepatic regions with numerous large creamy spots; four similar spots in a square on the gastric region and a very large one on either branchial region near the middle of the postero-lateral border; fingers blood-red in their distal half, the extreme tips milk-white.

In the Indian Museum are 9 specimens from off the Konkan coast, 56–58 fms., on a bottom of fine sand. The carapace of the largest specimen is 50 millim. in length and 78 millim. in extreme breadth.

30. *Charybdis* (*Goniosoma*) *quadrimaculata*, A. M. Edw.

Goniosoma quadrimaculatum, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 375, 385, pl. xxxiv. fig. 3 : Ortmann. Zool. Jahrb., Syst., VII. 1893, p. 82.

Goniosoma quadrimaculatum, A. M. Edw. *Portunus lucifer* Fabr., de Man, Journ. Linn. Soc., Zool. XXII. 1887–88, p. 83 *footnote*.

Goniosoma luciferum, J. R. Henderson, Trans. Linn. Soc. Zool., (2) V. 1893, p. 374.

Differs from *C. crucifera* in the following particulars :—

(1) the carapace though in sculpture of surface similar, is very much broader, its length being much less than two-thirds its breadth :

(2) the frontal teeth are deeper cut and those of the second pair slope outwards rather more :

(3) the teeth of the antero-lateral borders are regular and are claw-shaped, instead of being broad anteriorly-acuminate lobes ; the first is acute and except in its smaller size is similar to the next four, and the last is more spine-like and more prominent :

(4) the orbits are smaller, their diameter being only two-sevenths the width of the inter-orbital space ; *both the inner angle and the lobule at the outer end of the lower border are acutely dentiform* :

(5) the chelipeds in the male are not very much more than twice the length of the carapace ; the hand is 6-costate and the costæ are commonly milled in their proximal half, and there are 5 spines on the upper surface of the hand ; the fingers of the larger cheliped are shorter than the palm :

(6) in the last pair of legs the merus is nearly twice as long as broad, and the posterior border of the propodite is strongly serrated throughout :

(7) the 6th tergum of the male abdomen has its sides parallel or even slightly divergent in at least two-thirds of its extent :

Colours in spirit yellowish brown with 2 large white spots on either branchial region.

In the Indian Museum are 20 specimens from all parts of the coast of the peninsula : the carapace of the largest specimen is 60 millim. long and 98 millim. in extreme breadth.

31. *Charybdis* (*Goniosoma*) *annulata* (Fabr.) A. M. Edw.

Portunus annulatus, Fabricius, Ent. Syst. Suppl. p. 364 (*sec.* A. Milne Edwards.).

?? Cancer fasciatus, Herbst Krabben, III. i. 62, pl. xlix. fig. 5. (*sec.* A. M. Edw).

? Cancer sexdentatus, Herbst, Krabben, pl. vii. fig. 52.

Portunus annulatus, Latreille, Hist. Nat. Crust. VI. p. 15 (*sec.* A. Milne Edwards).

Thalamita annulata, Milne Edwards, Hist. Nat. Crust. I. 463 (*sec.* A. M. Edw.).

Goniosoma annulatum (Fabr.), A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 374, 385 : Miers, Ann. Mag. Nat. Hist. (5) V. 1880, p. 238 : de Man, Notes Leyden

Mus. V. 1883, p. 151 and Zool. Jahrb., Syst., VIII. 1894-95, p. 561 : Ortmann, Zool. Jahrb., Syst., VII. 1893-94, p. 82 : J. R. Henderson, Trans. Linn. Soc. Zool., (2) V. 1893, p. 375.

Goniosoma orientale Heller (*nec* Dana), "Novara" Crust. p. 29, pl. iii. fig. 3 (*sec.* de Man).

Differs from *C. crucifera* in the following particulars :—

(1) the carapace is more convex, and the transverse lines are even fainter, especially on the gastric region :

(2) the frontal teeth are deeper-cut and sharper (in adults) :

(3) the teeth of the antero-lateral borders are regular ; the first is small and acute, the second is not much larger than the first, and the last (in adults) is smaller than any of the three immediately in front of it :

(4) *the major diameter of the orbit is only a fourth the width of the inter-orbital space* : the inner angle of the lower border of the orbit is dentiform and strongly salient, and the lobule at the outer end of this border is ill-defined :

(5) the chelipeds are not much more than twice the length of the carapace (in the male) ; the hand has 5 spines on the upper surface, but two of them—those immediately behind the finger-joint—are tubercles rather than spines ; the fingers of the larger cheliped are as long as the palm, those of the smaller cheliped are longer than the palm :

(6) in the last pair of legs the merus is nearly twice as long as broad and the posterior border of the propodite is serrated in a large part of its extent :

(7) the 6th abdominal tergum of the male is as long as or nearly as long as broad and has its sides parallel in about three-fourths of their extent.

From *Charybdis quadrimaculata* this species is distinguished by the narrower carapace, by the smaller orbits and the different form of the lower orbital border, and by the greater length of the 6th tergum of the male abdomen.

In the Indian Museum are 7 specimens from Karachi and 1 from Bimlipatam, besides 1 from Penang. The carapace of the largest specimen is 48 millim. long and 70 millim. in extreme breadth.

But for high contrary authority, I should consider this species to be identical with the *Cancer sexdentatus* of Herbst's pl. vii. fig. 52.

32. *Charybdis* (*Goniosoma*) *merguiensis*, de Man.

Goniosoma merguiense, de Man, Journ. Linn. Soc., Zool., XXII. 1887-88, p. 82, pl. v. fig. 3, 4, and Zool. Jahrb., Syst., 1894-95 p. 560.

Goniosoma Helleri, Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 375.

Very closely resembles *C. quadrimaculata*, but may be distinguished from that species by the following characters:—

(1) the length of the carapace is two-thirds the breadth:

(2) the frontal teeth, in the adult are more acute:

(3) the little lobule at the outer end of the lower border of the orbit is not dentiform:

(4) there is *an acute spine on the posterior border of the* carpus *of the last pair of legs* (as well as the usual one on the merus):

(5) the 6th abdominal tergum of the male is, like that of *C. annulata*, as long as broad, or nearly so, with the sides parallel or slightly divergent in about three-fourths of their extent.

For the rest, this species differs from *C. crucifera* in the same particulars as *C. quadrimaculata* does, though the last spine of the antero-lateral border is often more prominent than in *C. quadrimaculata*.

In the Indian Museum are specimens, 22 in number from Mergui, Andamans, Karachi and the Persian Gulf—besides 1 from Singapore 2 from Hongkong. The largest has the carapace 46 millim. long and 69 millim. in extreme breadth.

But for high contrary authority I should have felt inclined to refer this species to the *Cancer fasciatus* of Herbst (Krabben III. i. 62, pl. xlix. fig. 5).

33. *Charybdis* (*Goniosoma*) *affinis*, Dana.

Charybdis affinis, Dana, Proc. Ac. Nat. Sci. Philad. 1852, p. 85, and U. S. Expl. Exp. Crust. pt. I. p. 286, pl. xvii. figs. 12 *a–c*.

Goniosoma affine, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 384, 385: de Man, Journ. Linn. Soc., Zool. XXII. 1887–88, p. 80, pl. V. fig. 2. and Zool. Jahrb., Syst., VIII. 1894–95, p. 559: J. R. Henderson, Trans. Linn. Soc., Zool. (2) V. 1893, p. 374.

Differs from *C. crucifera* in the following particulars:—

(1) the carapace is flatter, its transverse ridges are much more distinct and there is an additional one across the cardiac region, and the regions are better defined:

(2) the frontal teeth are more acute and are not so parallel:

(3) the first tooth of the antero-lateral border though distinctly emarginate anteriorly has its inner angle acute, and the last tooth is conspicuously larger and more prominent than the last but one, the other teeth are more regularly cut and the antero-lateral border as a whole is less oblique:

(4) the inner angle of the lower border of the orbit is distinctly dentiform:

(5) the chelipeds are only about twice the length of the carapace in the male: the hands are 6 or 7-costate and have 5 spines on the

upper surface, the palms are more swollen (in the adult) and in the smaller cheliped the fingers are decidedly longer than the palm:

(6) the surface of the carapace and chelipeds is much more pubescent, and the size is much smaller.

In the Indian Museum there are 6 specimens, from Mergui, Akyab, and the Orissa coast: the carapace of the largest is 32 millim. long and 48 millim. in extreme breadth.

34. *Charybdis* (*Goniosoma*) *callianassa* (Herbst) A. M. Edw.

? Cancer callianassa, Herbst, Krabben. III. ii. 45, pl. liv. fig. 7.

Goniosoma callianassa, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 382, 385 (part).

Goniosoma variegatum. Miers, Zool. H. M. S. Alert p. 232: Cano, Boll. Soc. Nat. Napoli, III. 1889, p. 219: Thallwitz, Abh. Zool. Mus. Dresden, 1890-91, No. 3, p. 47: Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 376.

A small species, the carapace usually being about 23 millim. long and about 36 millim. in extreme breadth.

Length of carapace about two-thirds the extreme breadth (except in the majority of adult females, in which the last spine of the antero-lateral borders is much prolonged).

Carapace decidedly convex, especially in its posterior half, covered with short pile and crossed transversely by fairly well marked very faintly granular ridges, which are disposed as in *C. crucifera*, except that there is an additional one across the cardiac region.

Front cut into six teeth (*not* including the inner supra-orbital angles) of which the middle two are slightly the most prominent, the second on either side are broadish with a strong outward slope, and the third on either side are the narrowest and most acute.

Antero-lateral borders cut into six teeth (including the outer orbital angle) of which the first is anteriorly notched with the inner angle acute, and the last is spinelike and from $1\frac{1}{2}$ to twice (in many adult females nearly three times) the length of the last but one: all the teeth have their free edges finally serrulate (except in the case of the posterior edge of the last).

The posterior border of the dorsal surface of the carapace forms a curve with the postero-lateral borders.

Orbits with a perceptible, but not strong, dorsal inclination: the major diameter is a little more than a third the width of the interorbital space: the inner angle of the lower border is dentiform, but the lobule at the outer end of this border is hardly distinguishable.

There is a granular ridge, but no tooth, on the lobule at the outer angle of the basal antenna-joint.

The chelipeds are about $2\frac{1}{4}$ times the length of the carapace (in the adult male), and when denuded are smooth and polished except for costæ on the wrist and hand, and for granules on the far end of the upper surface of the arm. There are only two enlarged spines on the anterior border of the arm, and the posterior border of the arm is spineless. Wrist with granular costæ on the upper and outer surface, with the inner angle strongly spiniform, and with three spinules at the outer angle. Palm inflated, barrel-shaped, 6-costate, the four upper costæ granular; only three spines—and those small—on the upper surface. Fingers of the larger cheliped a good deal shorter than the palm.

Merus of last pair of legs $\frac{2}{3}$ to $\frac{3}{4}$ as broad as long, with a spine, as usual, near the far end of the posterior border: the same border of the propodite is smooth.

The 2nd and 3rd abdominal terga in both sexes—as well as, to a less extent, the 4th in the female—are transversely carinate: the 6th tergum in the male is transversely oblong with the anterior (true posterior) angles rounded.

In the Indian Museum are 66 specimens, chiefly from the Madras and Orissa coasts, but also from Bombay and Karáchi.

The carapace of an exceptionally large male is 29 millim. long and 46 millim. in extreme breadth.

This species is easily distinguished from *C. variegata* De Haan, with which it appears to have been confounded, by the following characters:—

(1) the carapace is very decidedly convex in its posterior half, the regions are less clearly defined, and there is only one transverse ridge on the epibranchial regions—namely the usual one that runs in from the last antero-lateral tooth:

(2) the four middle frontal teeth are blunter and more divergent, and the third on either side is larger and more prominent:

(3) the edges of the teeth of the antero-lateral border are serrulate:

(4) the eyes are smaller and the orbits have a much less marked dorsal inclination; the little lobule at the outer end of the lower border of the orbit is obsolete, instead of being a sharp independent denticle.

(5) there is a ridge, but no tooth, on the lobe of the basal antenna-joint.

(6) there are only 2 large spines on the anterior border of the arm, there are no squamiform granules on the under surface of the arm and hand, there are three spinules on the outer surface of the wrist; the palms are more inflated, their costæ less numerous and less salient, and both the spines immediately behind the finger-joint are obsolete:

(7) the sixth abdominal tergum of the male is transverse oblong with the anterior angles rounded off.

C. callianassa has a considerable resemblance to *C. affinis* Dana, from which it may be distinguished by the following characters:—

(1) the carapace is convex instead of nearly flat, the frontal teeth differ, and the teeth of the antero-lateral border are serrulate:

(2) the orbit is more dorsally inclined:

(3) there are only two enlarged spines on the anterior border of the arm: the hands are barrel-shaped and have only 3 spines on their upper surface:

(4) the 6th abdominal tergum of the male has the sides parallel or almost divergent in two-thirds of their extent, whereas in *C. affinis* they form gradually converging curves.

35. *Charybdis* (*Goniosoma*) *rostrata*, A. M. Edw.

Goniosoma rostratum, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 379, 385, pl. xxxv. fig 2: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 377.

A small species: the length of the carapace in adults being somewhere about 20 millim., and the extreme breadth about 25 millim.

Carapace about four-fifths as long as broad in the male, but not quite so long in the female, moderately convex, crossed transversely by granular ridges which are disposed as in *C. crucifera*, except that there is an additional one across the cardiac region (just as in *C. affinis* and *C. callianassa*), densely though finely pilose.

Front as a whole decidedly prominent, cut into six teeth (*not* including the inner supra-orbital angles), of which the middle two are bluntly pointed and project far beyond the others, the next on either side are broad and slope outwards, and the third on either side are small narrow and nearly straight.

Antero-lateral borders cut into six serrulate teeth, of which the first is very acute and the last is more spinelike than the others.

The posterior border of the dorsal surface of the carapace forms a curve with the postero-lateral borders.

Orbits without any particular dorsal inclination, the major diameter not much less than half the width of the interorbital space, the inner angle of the lower border dentiform, the lobule at the outer end of the lower border distinct but not dentiform.

A strongish granular ridge on the lobule of the basal antenna-joint.

Chelipeds less than twice as long as the carapace even in the male, nearly smooth when denuded. Arm with 2 spines on the anterior border and none on the posterior border. Wrist with a strong spine at the inner angle and with two—less commonly three—spinules at the outer angle. Hands inflated in the male, but not much so in the female,

6-costate, the four upper costæ granular; only two spines—and those small—on the upper surface of the hand. Fingers longer than the palm in the smaller cheliped, as long as the palm in the larger cheliped.

The merus of the last pair of legs is nearly as broad as long and has the usual spine on its posterior border; the posterior border of the propodite is smooth.

The 6th tergum of the male abdomen is broader than long and has curved and gradually convergent sides.

In the Indian Museum are 98 specimens, chiefly from the northern parts of the Bay of Bengal, Mergui, and the Gulf of Martaban, but also from off the Andamans and off Ceylon.

36. *Charybdis* (*Goniosoma*) *variegata* (De Haan).

? Portunus variegatus, Fabricius, Ent. Syst. Suppl. p. 364.

? ? ? Cancer callianassa, Herbst. III. ii. 45, pl. liv. fig. 7.

? Thalamita callianassa, Milne Edwards, Hist. Nat. Crust. I. 464.

Charybdis variegatus, De Haan, Faun. Japon. Crust. pl. i. fig. 2 : Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39.

Goniosoma callianassa, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 382, 385 (part).

Goniosoma variegatum, var. *callianassa*, J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 377.

A small species: the carapace in the adult about 20 millim. long and about 35 millim. in extreme breadth.

Carapace about four-sevenths as long as broad (or about two-thirds as long as broad without the enlarged lateral spines), slightly convex, the regions for a Goniosoma well defined, crossed transversely by numerous salient granular ridges arranged as in *G. natator*—the ridges standing out from the copious short pile with which the carapace is covered.

Front cut into 6 rather pointed teeth (*not* including the inner supra-orbital angles) of which the middle two are the most prominent and the outer one on either side is the least prominent *and much the slenderest*.

Antero-lateral borders cut into six teeth (including the outer orbital angle) which gradually increase in size from before backwards, the last being a salient spine about twice as long as the last but one—*Neptunus* like.

The posterior border of the dorsal surface of the carapace forms a curve with the postero-lateral borders.

Eyes large: the orbit, *which has a strong dorsal inclination*, is about two-fifths the width of the interorbital space; the inner angle of its

lower border, though not prominently dentiform, is acuminate, and the lobule at the outer end of this border is sharply dentiform.

There is a prominent tooth on the lobule at the outer angle of the basal antennal joint: this is present in no other Indian species.

Chelipeds about $2\frac{1}{3}$ times the length of the carapace (in the male): all three surfaces of the arm and almost all parts of the surface of the hand are covered with granular squamiform markings. Arm with 3 enlarged spines on the anterior border, the posterior unarmed. Wrist costate on the upper and outer surface; the inner angle spiniform; *only two spinules* at the outer angle. Hands (in adults only) more than usually unequal for a *Goniosoma*: in one cheliped (adult) the palm is swollen and markedly longer than the fingers, in the other it is not swollen and is not much longer than the fingers: the hand is 7-costate and there are 4 spines on its upper surface.

The merus of the last pair of legs is about four-fifths as broad as long and has a spine near the distal end of its posterior border, the propodite has one or two inconspicuous spinules near the far end of its posterior border.

In both sexes the 2nd and 3rd abdominal terga are transversely keeled: in the male the 6th tergum is a good deal broader than long and has strongly curved sides.

In the Indian Museum are 43 specimens from the Madras coast and the Persian Gulf, besides one from Nagasaki and one from Hongkong.

37. *Charybdis* (*Goniosoma*) *natator* (Herbst) A. M. Edw.

Cancer natator, Herbst, Krabben. II. v. 156, pl. xl. fig. 1.

Portunus sanguinolentus, Bosc, Hist. Nat. Crust. I. p. 218.

Thalamita natator, Milne Edwards, Hist. Nat. Crust. I. 463, pl. xvii. figs. 13, 14.

Charybdis natator, De Haan, Faun. Japon. Crust. p. 10.

Charybdis granulatus, De Haan, Faun. Japon. Crust. p. 42, pl. i. fig. 1: Krauss, Sudafr. Crust. p. 24: Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39.

Goniosoma natator, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 370, 385: Hilgendorf, MB. Ak. Berl. 1878, p. 801: Miers, Zool. H. M. S. Alert, pp. 518, 539: F. Muller, Verh. Ges. Nat. Basel, VIII. 1886, p. 475: de Man, Archiv. f. Naturges. LIII. 1887, i. p. 334, pl. xiii. fig. 5, and in Weber's Zool. Ergebn. Niederl. Ost.-Ind. II. 1892, p. 285: Walker, Journ. Linn. Soc. Zool. XX. p. 110: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 374.

Length of carapace about five-sevenths the breadth.

Carapace slightly convex, with a somewhat mangy pile, crossed transversely by several rather coarse granular more or less broken ridges: the most conspicuous of these ridges runs—broken only by the cervical groove—right across between the last teeth of the antero-lateral borders, and in front of this are two—the anterior one widely divided in the middle—on the gastric region, while behind it are two short ones

on either branchial region and a bow-shaped one on the cardiac region.

Front cut into 6 bluntly-rounded teeth (*not* including the inner supra-orbital angles) of nearly equal size.

Antero-lateral borders cut into 6 teeth, of which the first (the outer orbital angle) is blunt or truncated, the last is rather smaller than those immediately in front, and the intervening four though anteriorly acute—especially in the young—tend to grow blunt.

The posterior border of the dorsal surface of the carapace forms a curve with the postero-lateral borders.

Orbit without any particular dorsal inclination, its major diameter is about two-sevenths the width of the interorbital space: the inner angle of the lower border is not prominent and hardly dentiform, the lobule at the outer end of this border though well defined is not dentiform.

Chelipeds about $2\frac{2}{3}$ times as long as the carapace (in the adult male), their under surface is covered with transverse squamiform tubercles which are specially regular and distinct on the hand, their other surfaces also are beset with tubercles which are more or less distinctly squamiform: the space between the tubercles is furred. Three *enlarged* teeth (besides smaller ones) on the anterior border of the arm, the posterior border unarmed. Inner angle of wrist strongly spiniform, outer angle with three small spines. Hand beset with longitudinal series of tubercles, and having 4 or 5 spines on the upper surface: fingers about as long as hand.

The merus of the last pair of legs is about two-thirds as broad as long and has a strong spine on the posterior border, and the same border of the propodite is armed with spinules that become very indistinct with age.

In both sexes the 2nd–4th abdominal terga are transversely keeled: in the male the 6th tergum is as long as broad and has the sides parallel or even slightly divergent in three-fourths of their extent.

Colours in spirit, mottled, with much admixture of red, the ridges of the carapace dark red.

In the Indian Museum are 10 specimens from Ceylon, Madras, and Pondicherry, besides 1 from Singapore. In the largest specimens the carapace is about 70 millim. long and about 100 millim. broad.

38. *Charybdis* (*Goniosoma*) *miles* (De Haan).

Portunus (*Charybdis*) *miles*, de Haan, Faun. Japon. Crust. p. 41, pl. xi. fig. 1: Stimpson Proc. Ac. Nat. Sci. Philad. 1858, p. 39.

Goniosoma miles, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 378, 385: Ortmann, Zool. Jahrb., Syst., VII. 1893, p. 81.

Size medium: an adult female in the Indian Museum has the carapace 43 millim. long and 59 millim. broad.

Carapace not very broad, its length about three-fourths its breadth, little convex, smooth or granular in places when denuded of copious short pile; its anterior half only is crossed transversely by faint granular lines disposed as in *C. crucifera*.

Front cut into six acute teeth, *not* including the acutely dentiform inner supra-orbital angles, of which the two middle ones hardly project beyond the others and the outermost on either side are the narrowest and most acute.

Antero-lateral borders very little oblique, cut into 6 acutely acuminate teeth, of which the first (the outer orbital angle) is broad and anteriorly notched with the inner angle acuminate, and the last is not larger or more prominent than the others.

The posterior border of the dorsal surface of the carapace forms a curve with the postero-lateral borders.

Eyes large: the orbit has a considerable dorsal inclination and its major diameter is nearly half the width of the interorbital space; of the two fissures in its roof the inner is a distinct gap; the inner angle of the lower border is acutely dentiform.

The antero-external angle of the merus of the external maxillipeds is somewhat produced laterally.

The chelipeds are long and, for a *Goniosoma*, are slender; their undersurface is finely granular (as also is a large part of the upper surface of the arm) the granules of the hand showing a squamiform arrangement. The arm has four *large* spines on the anterior border and a spinule at the end of the lower border, but the posterior border is unarmed. The hand is 6-costate, most of the costæ being finely granular, and has 4 acute spines on the upper surface. Fingers slender, very acute, sharply toothed, longer than the palm, which is not swollen.

The last pair of legs have the merus about two-thirds as long as broad and are unarmed except for a spine on the posterior border of the merus and two or three denticles near the far end of the posterior border of the propodite.

The 6th tergum of the male abdomen is much broader than long and has curved and gradually converging sides.

Colours in life red, the tips of spines light, chelipeds mottled red, fingers banded dark and light red.

In the Indian Museum are a male and egg-laden female from the Gulf of Martaban, 53 and 67 fms.

39. *Charybdis* (*Goniosoma*) *orientalis* (Dana).

? *Charybdis orientalis*, Dana, Proc. Ac. Nat. Sci. Philad. 1852, p. 85, and U. S. Expl. Exp. Crust. pt. I. p. 285, pl. xvii. fig. 10.

Goniosoma orientale, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 383, 385:

de Man, Notes Leyden Mus. I. 1879, p. 60, V. 1883, p. 151, and XV. 1893, p. 286: Lenz and Richters, Abh. Senck. Nat. Ges. Frankfurt, XII. 1881, p. 422: Cano, Boll. Soc. Nat. Napol. III. 1889, p. 220: J. R. Henderson, Trans. Linn. Soc. Zool. (2) V. 1893, p. 375.

? Goniosoma dubium, Hoffmann in Pollen and Van Dam, Rech. Faun. Madagasc., V. 2, 1874, p. 11, pl. ii. figs. 6–8.

Carapace about two-thirds as long as broad, crossed transversely by salient granular lines which have the same disposition as in *C. variegata* De Haan, except that there is only one on either branchial region behind the level of the last spine of the antero-lateral borders.

Front cut into 6 truncated teeth, *not* including the inner supra-orbital angles.

Antero-lateral borders very little oblique, cut into six teeth (including the outer orbital angles) *of which the second is rudimentary and looks like a denticle cut out of the base of the first*, while the last is not enlarged in adults, though in the young it *may* be.

The posterior border of the dorsal surface of the carapace though straight forms a curve with the postero-lateral borders.

Orbit without any particular dorsal inclination, its major diameter a little more than a third the width of the inter-orbital space, the inner angle of the lower border broadly dentiform, the lobule at the outer end of this border distinct but not dentiform.

Arm with 3 spines on the anterior border and none on posterior border: wrist with a strong spine at the inner angle and 2 or 3 spinules on the outer: hand not tumid, 5 spines, of which 4 are large, on the upper surface.

In the fifth pair of legs the merus is nearly twice as long as broad, and has the usual spine on the posterior border: the same border of the propodite is serrated.

In the Indian Museum are five specimens, from the Pedro Shoal, from the Madras coast of the Gulf of Manár, and from off the Arakan coast.

This species is distinguished from *C. anisodon*, which, though not known to occur in Indian Seas, is found at Singapore, by the presence of granular ridges on the carapace, by the five spines (instead of 2) on the hand, and by the serrated (instead of smooth) posterior border of the propodite of the last pair of legs. It is one of the conspicuous links between *Goniosoma* and *Thalamita*.

40. *Charybdis* (*Goniohellenus*) *ornata*, A. M. Edw.

Thalamita truncata, De Haan, Faun. Japon. Crust. p. 43, pl. ii. fig. 3 and pl. xii. fig. 3 only ♂.

Charybdis truncata, Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39.

Goniosoma ornatum, A. Milne Edwards. Archiv. du Mus. X. 1861, pp. 376, 385: Miers, P. Z. S. 1879, pp. 20, 33, and Challenger Brachyura p. 191: Ortmann, Zool. Jahrb., Syst., VII. 1893, p. 83: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 376: de Man, Zool. Jahrb., Syst., VIII. 1895, p. 562.

A smallish species: the length of the carapace in adults is about 26 millim., its extreme breadth about 36 millim.

Length of carapace rather over two-thirds the extreme breadth. Carapace moderately convex with the regions fairly well defined, crossed transversely by well marked granular ridges which have much the same disposition as those of *G. crucifera*, except that there are in addition (1) a broad one—divided in the middle line—on the cardiac region, and (2) a short and broad one—or traces of two—on either branchial region.

The front is cut into eight lobes (*including* the inner supra-orbital angles) arranged in four pairs, of which the outermost pair on either side are bluntly dentiform, and the two middle pairs are broad shallow and lobe-like.

The antero-lateral borders are cut into six teeth (including the outer orbital angles) of which the first is obliquely truncated and the last is the smallest: the edges of all are entire.

The posterior border of the dorsum of the carapace is straight, and forms a somewhat up-turned or dog's-eared angle of junction with the postero-lateral borders.

The orbits have a strong dorsal inclination and their major diameter is not much less than half the width of the inter-orbital space: the inner angle of their lower border is broad and hardly dentiform.

The chelipeds are about $2\frac{1}{3}$ times the length of the carapace (in the male) and all their surfaces are covered with granular transverse squamiform markings. There are 2—less commonly 3—enlarged spines on the anterior border of the arm and the posterior border ends in a spinule. Inner angle of wrist strongly spiniform, three spinules on the outer angle. Hand 6 or 7-costate—the costæ with squamiform crenations—and with 4 spines on the upper surface. In adults the palm is full and is longer than the fingers in the larger cheliped, but shorter than the fingers in the smaller cheliped.

Merus of last pair of legs about two-thirds as broad as long, with the usual strong spine on the posterior border: the same border of the propodite is finely serrated.

In both sexes the 2nd and 3rd—and to a much less extent the 4th—abdominal terga are transversely keeled: the 6th tergum in the male is broader than long and has strongly curved sides.

In the Indian Museum are 6 fine specimens from the mouth of the

Hughli and Coromandel coast and 1 from the Arakan coast—also 1 from Hongkong and 1 from Java.

41. *Charybdis* (*Goniohellenus*) *hoplites*, Wood-Mason.

Goniosoma hoplites, Wood-Mason, Ann. Mag. Nat. Hist. (4) XIX. 1877, p. 422: Alcock and Anderson, J. A. S. B. Vol. LXIII. pt. 2, 1894, p. 184, and Ill. Zool. Investigator, Crust. pl. xxiii. fig. 6: Alcock, Investigator Brachyura, p. 67.

A small or smallish species.

The length of the carapace is not much more than half the extreme breadth measured between the tips of the last spine of the antero-lateral borders.

Carapace covered with a dense short tomentum, convex, the regions well defined and fairly well areolated—the convexities of many of the areolæ granular. The gastric region is divided into three sub-regions, the cardiac into two, and there is a very pronounced and independent swelling on the inner part of either branchial region.

A granular ridge crosses the middle of the gastric region transversely, and a similar ridge—strongly arched forwards—crosses each branchial region, beginning on the tip of the last epibranchial spine: these are the only transverse ridges on the carapace, although it sometimes happens that two of the granular subregional convexities of the anterior part of the gastric region are ridge-like.

The front is exactly like that of *C. ornata*, except that the outermost pair of teeth on either side are rather sharper.

The antero-lateral borders are cut into six teeth (including the outer orbital angle) of which the last is a *Neptunus*-like spine at least twice as long as those in front of it: the other 5 are square-cut lobules separated by wide and deep notches, and having their outer edge serrate and their anterior angle acuminate.

The posterior border of the dorsum of the carapace forms a strong dog's-eared angle of junction with the postero-lateral borders.

The orbits are exactly as in *C. ornata*, except that the inner fissure of the roof is wider and the outer fissure less distinct.

The chelipeds in typical specimens are exactly as in *C. ornata*, but it sometimes happens that the granulation of the arm does not cover the whole surface of that joint.

The last pair of legs are as in *C. ornata*, but the breadth of the merus varies from half to two-thirds the length of that joint.

The 6th tergum of the abdomen of the male is truncate-triangular, having almost no curve to the sides.

In the Indian Museum are 45 specimens from off the Coromandel coast, from about 50 to about 110 fathoms, and 4 from off the Indus Delta, 16 to 44 fms.

In an average specimen the length of the carapace is 26 millim., and the extreme breadth 48 millim.

Charybdis (*Goniohellenus*) *hoplites*, var. *vadorum*.

Differs from the typical deep-sea form in the following particulars:—

(1) the carapace is depressed, therefore the granular convexities of the areolæ stand out in higher relief:

(2) the last spine of the antero-lateral borders is rather longer:

(3) the spine at the inner angle of the wrist is much longer:

(4) Egg-laden females are hardly half the size.

In the Indian Museum are 9 specimens from the Orissa coast, 7½ to 20 fms., 6 from the Persian Gulf, and 3 from the Arakan coast.

Charybdis (*Goniohellenus*) *hoplites* var. *pusilla*.

This is a dwarf variety, egg-laden females having a carapace only about 9 millim. long and about 16 millim. in extreme breadth.

The carapace is of a thin texture, the chelipeds and legs are slenderer, and the dorsal bulge of the branchial regions is stronger and sharper.

In the Indian Museum are 300 specimens from off the Konkan coast 56 to 58 fathoms.

Gonioneptunus, Ortmann.

Gonioneptunus, Ortmann, Zool. Jahrb. Syst. etc., VII. 1893–94, p. 79.

This "genus," as Ortmann remarks, is a link between *Charybdis* (=*Goniosoma*) and *Neptunus*. It has much the same bearing to *Goniosoma* that the "genus" *Cronius* has to *Neptunus*, and is one of those forms that would justify any general zoologist in uniting all the Lupine "genera" of systematists into one natural genus.

It differs from *Goniosoma* only in the fact that the broad lobular process of the external angle of the basal antenna-joint is not in contact with the front, so that the antennal flagellum is not excluded from the orbital hiatus.

42. *Charybdis* (*Gonioneptunus*) *truncata* (De Haan).

Portunus truncatus, Fabricius, Ent. Syst. Suppl. p. 365, and Latreille, Hist. Nat. Crust. VI. p. 16, (*fide* A. M. Edw.).

Thalamita truncata, Milne Edwards, Hist. Nat. Crust. I. 463 (*fide* A. M. Edw.).

Portunus (*Thalamita*) *truncatus*, De Haan, Faun. Japon. Crust. p. 43, pl. xii. fig. 3, ♀ only.

Portunus (*Charybdis*) *truncatus*, De Haan, Faun. Japon. Crust. p. 65, pl. xviii. fig. 2.

Goniosoma truncatum, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 380, 385, pl. xxxiv. fig. 4.

Gonioneptunus subornatus, Ortmann, Zool. Jahrb. Syst. VII. 1893, p. 79, pl. iii. fig. 9.

The lobule of the basal antenna-joint does not touch the front, so that the flagellum stands in the upper part of the orbital hiatus.

The length of the carapace slightly exceeds two-thirds of the extreme breadth.

Carapace covered with a dense short tomentum, moderately convex, the regions ill-defined, crossed transversely by fine granular ridges which have the same disposition and are almost as faint as those of *C. crucifera*: in addition there are small patches of granules on the cardiac and inner part of the branchial regions.

The front is cut into eight teeth (*including* the inner orbital angles) of which the middle four are broadly triangular and almost acute, while the pair on either side are sub-confluent and form a sort of reduplicated inner supra-orbital angle, somewhat as in *Neptunus* (*Lupocycloporus*) *whitei*.

Antero-lateral borders cut into six teeth, of which the second is the smallest, and the 6th—though more spine-like—is hardly more prominent than those in front of it: all except the sixth are cut rather square, have the free edge serrate, and are anteriorly acuminate—much as in *C. hoplites*.

The posterior border of the dorsal surface of the carapace is practically straight and forms an obtuse angle of junction with either postero-lateral border.

Except that the inner angle of the lower edge of the orbit is dentiform and strongly prominent, and that the inner fissure of the roof is wider, the orbits, and the eyes, are as in *C. ornata*.

Chelipeds not much more than twice the length of the carapace, their upper surface more or less granular, their under surface with smooth-worn squamiform markings. Arm with two more enlarged and one or two less enlarged spines on the anterior border, and one at the far end of the posterior border. Wrist with 3 spinules on the outer angle and a large spine at the inner angle. Hands inflated, strongly 6 or 7-costate—the costæ granular, and with 3 small spines on the upper surface: very similar, in fact, to those of *C. callianassa*. The fingers in the smaller cheliped are as long as, but in the larger cheliped are shorter than, the palm.

The merus of the last pair of legs is nearly as long as broad and has the usual spine on the posterior border: the same border of the propodite is smooth.

In both sexes the 2nd and 3rd abdominal terga are carinate—the 2nd strongly and sharply so. The 6th tergum of the male is truncate-triangular, the sides being very slightly sinuous.

In life the dorsal surface of the carapace is terra-cotta red and there is a good-sized crimson spot towards the inner side of the middle of either branchial region: the exposed dorsal surface of the chelipeds is reddish with numerous darker red markings.

In the Indian Museum there are 6 specimens, including an egg-laden female, from the Gulf of Martaban 53–67 fathoms.

In the male the carapace is about 27 millim. long and about 39 millim. in extreme breadth: in the female it is a good deal smaller.

43. *Charybdis* (*Gonioneptunus*) *bimaculata*, Miers.

Goniosoma variegatum var. *bimaculatum*, Miers, Challenger Brachyura, p. 191, pl. xv. fig. 3.

As in *C. truncata* the lobule at the outer angle of the basal antenna-joint does not touch the front, so that the antennal flagellum stands in the orbital hiatus.

Length of carapace more than $\frac{3}{5}$ but less than $\frac{3}{4}$ the breadth.

Carapace flattish, covered with dense short tomentum, crossed transversely by salient granular ridges arranged exactly as in *C. ornata*.

Front almost similar to that of *C. ornata*, except that, as in *C. truncata*, the outer pair of teeth on either side are sub-confluent and form a sort of reduplicated inner supra-orbital angle.

Antero-lateral borders exactly as in *C. truncata*, except that the last (spine-like) tooth is at least half again as long as any of those in front of it.

Posterior border of dorsal surface of carapace exactly as in *C. truncata*.

Eyes and orbits as in *C. ornata*.

Chelipeds about $2\frac{1}{4}$ times the length of the carapace. The lower border and the distal half of the upper surface of the arm are granular: there are 2 or 3 spines on the anterior border of this joint, and the posterior border ends in a spine. Upper surface of wrist granular, the inner angle of this joint strongly dentiform, and there are 2 or 3 spinules on the outer angle. Hand in the adult inflated and, except that the squamiform markings of the under surface are almost obliterated, exactly similar to that of *C. truncata*.

Abdomen as in *C. truncata*.

Except that the merus is only about $\frac{3}{5}$ as long as broad, the last pair of legs are as in *C. truncata*.

In the Indian Museum are 2 small specimens, from Palk Straits

and the Orissa coast, as well as one of the "Challenger" duplicates from Japan.

In the Japanese specimen there is a small dark spot near the middle of either epibranchial region.

Though the sculpture of the carapace and the dorsal inclination of the orbits do certainly give this species a considerable resemblance to *C. variegata*, and though the hands strongly resemble those of *C. callianassa* (which has been confused with *C. variegata*), this species is absolutely different from those, and is very nearly allied to *C. truncata*.

44. *Charybdis* (*Gonioneptunus*) *investigatoris*, n. sp.

The lobule of the basal antenna-joint does not touch the front, so that the flagellum stands in the upper part of the orbital hiatus.

Length of carapace nearly five-sixths the breadth.

Carapace little transverse, little convex, the regions indistinct, and the transverse markings extremely indistinct.

Front cut into eight teeth (*including* the inner orbital angles) of which (1) the middle two are rounded, rather narrow, and distinctly the most prominent (2) the submedian are broad and slant outwards, and (3) the outermost pair on either side are narrow and subacute, and form a sort of reduplicated supra-orbital angle. *The extent of the fronto-orbital border is almost equal to the greatest breadth of the carapace.*

Antero-lateral borders little oblique, cut into six acute teeth with sharp entire edges, of which the first 3 are much larger than the next 2, while the last is a spine only slightly more prominent than the tooth in front of it.

The posterior border of the dorsum of the carapace, though nearly straight forms a curve with the postero-lateral borders.

The eyes and orbits are large—the major diameter of the orbit being at least half the width of the inter-orbital space—but have no particular dorsal inclination: the inner angle of the lower border of the orbit is not dentiform.

Chelipeds slender, about twice the length of the carapace. Four acute spines, three of which are enlarged, on the anterior border, and none on the posterior border. Wrist with 3 spinules on the outer angle and a very long and acute spine at the inner angle. Hand slender with indistinct costæ on the outer surface, with a ridge along the middle of the inner surface, and with four spines on the upper surface—the two on the inner edge of the upper surface being singularly large and acute. Fingers acute, markedly longer than the hand (palm).

Legs long and slender. The merus of the last pair is more than

twice as long as broad and has the usual spine at the far end of the posterior border: there are 1 or 2 spinules on the same border of the propodite of this pair.

The 6th abdominal tergum of the male is truncate-triangular and its line of separation from the preceding segments is indistinct.

A single male specimen, with the carapace 10 millim. long and 12 millim. broad, from off the Ganjam coast, 35 fathoms.

Thalamonyx, A. Milne Edwards.

Thalamonyx, A. Milne Edwards, Nouv. Archiv. du Mus. IX. 1873, p. 168: Miers, Challenger Brachyura, p. 192.

Resembles *Charybdis* (=*Goniosoma*) in all essential characters but differs in the following particulars:—

(1) the front proper (not including the inner supra-orbital angles) is broader, being very much more than a third the greatest width of the carapace, and is cut into two broad lobes, not including the inner supra-orbital angles:

(2) the antero-lateral borders are very little oblique, and are cut into 5 teeth only.

Ortmann, whom I am inclined to follow, regards it as only a subgenus of *Charybdis* (=*Goniosoma*). de Man, on the other hand, is inclined to regard it as identical with *Thalamita*, and there is much to be said in favour of this view also. The fronto-orbital border, however, is not quite so broad and the antero-lateral borders are not, therefore, so nearly parallel, nor is the posterior part of the carapace so contracted nor the inner supra-orbital angle so broad as in most species of *Thalamita*. It is a form that excellently well illustrates the real generic unity of the two supposed genera.

45. *Thalamonyx gracilipes*, A. M. Edw.

Thalamonyx gracilipes, A. Milne Edwards, Nouv. Archiv. du Mus. IX. 1873, p. 169, pl. iv. fig. 3.

Thalamonyx danæ var. *gracilipes*, Miers, Challenger Brachyura, p. 192.

Goniosoma (*Thalamonyx*) *danæ*, Ortmann, Zool. Jahrb., Syst., VII. 1893–94, p. 83 (part).

Carapace more than two-thirds as long as broad with the regions fairly well defined and the surface granular, some of the granules forming short transverse lines.

Front sublamellar and prominent, divided into two broad shallow lobes of which the inner angles are a little bit pronounced.

Antero-lateral borders little oblique and little arched, forming an obtuse angle little short of a right-angle with the anterior border, cut into five claw-like teeth of nearly equal size.

The posterior border of the dorsum of the carapace is straight but does not form an angle with the postero-lateral borders.

Orbits large, with no particular dorsal inclination, their major diameter about half the width of the inter-orbital space: the inner angle of the lower border is bluntly acuminate but hardly dentiform.

Chelipeds granular: arm with squamiform markings, with 2 spines on the anterior border and none on the posterior border: wrist costate, with 3 tiny spinules on the outer angle and a strong spine at the inner angle: hands not inflated (in the female at least), carinate, with 3 spines on the upper surface.

Merus of last pair of legs hardly half as long as broad, with the usual spine near the far end of the posterior border.

An egg-laden female in the Indian Museum, from the Andamans, has the carapace 7 millim. long and 9 millim. broad.

Miers and Ortmann regard this species as not distinct from *T. danæ*, A. M. Edw. (Nouv. Archiv. du Mus. V. 1869, p. 183, pl. vii. figs. 6, 7).

Thalamita, Latreille, A. M. Edw.

Thalamita, Latreille in Cuvier Règne An., Crust. (ed. 2) Vol. IV. p. 33 (footnote): A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV. 1860, p. 228, and Archiv. du Mus. X. 1861, p. 354: Miers, Challenger Brachyura, p. 193.

Thalamites quadrilatères, Milne Edwards, Hist. Nat. Crust. I. 457.

Carapace hexagonal (but, owing to the straightness of the antero-lateral borders, with a quadrilateral cast), broad or very broad, depressed or little convex, usually with well marked transverse ridges.

The extent of the fronto-orbital border is usually little less than the greatest breadth of the carapace: the width of the inter-orbital space is from three-fifths to half the greatest breadth of the carapace: and the width of the true front (*i.e.* excluding the broad inner supra-orbital angles) is from two-fifths to a third the greatest breadth of the carapace.

Front well separated from the broad supra-orbital angles and cut into 2, 4, or 6 lobes or teeth, not including the supra-orbital angles.

Antero-lateral borders hardly oblique, forming almost a right angle with the frontal border, very little arched, cut into 5 teeth (including the outer orbital angle) of which the fourth is often rudimentary and sometimes absent.

Two sutures in the upper border of the orbit: a gap in the lower border, of which border the inner angle is seldom prominent. The antennules fold transversely.

Basal antennal joint having its outer angle enormously produced,

the process being in close contact with the whole length of the inner supra-orbital angle and completely filling the orbital hiatus, from which, therefore, the antennal flagellum is widely excluded.

Epistome sufficiently long: buccal cavern squarish, broader than long, the efferent branchial channels well defined.

Chelipeds and legs as in *Charybdis* (=*Goniosoma*). Abdomen as in *Neptunus*.

Obviously different as the extremes are, the forms included under *Charybdis* (=*Goniosoma*) and *Thalamita* yet constitute an unbroken series, and there is no one character, still less a combination of characters, by which the two groups can be sharply segregated.

Among Indian forms, however, even the most Charybdis-like Thalamites (e.g. *T. exetastica* and *imparimanus*) never have more than five distinct teeth on the antero-lateral border (though *T. exetastica* has a microscope accessory (6th) denticle on the first tooth), and always have a characteristic broadening of the inner supra-orbital angle; while the most Thalamita-like Charybdes (e.g. *C. investigatoris*) has the antero-lateral border cut into six distinct teeth and has a narrow inner supra-orbital angle.

Key to the Indian species of the genus Thalamita.

I. The extreme extent of the basal antenna-joint is far greater than the major diameter of the orbit:—
   A. Front cut into six lobes of nearly equal size—*exclusive* of the broad inner supra-orbital angles:—
      1. Antero-lateral borders of carapace cut into five teeth of nearly equal size:—
         i. Transverse ridges of carapace faint: outer surface of palms nearly smooth ..... *T. crenata.*
         ii. Transverse ridges of carapace very distinct: outer surface of palms costate ..... *T. danæ.*
      2. Antero-lateral borders cut into five teeth, of which the 4th is much the smallest:—
         i. Fourth tooth rudimentary: crest of basal antenna-joint with some large spines..... *T. prymna.*
         ii. Fourth tooth rudimentary: crest of basal antenna-joint smooth ..... *T. picta.*
         iii. Fourth tooth small: basal antenna-joint granular ..... *T. stimpsoni.*

B. Front cut into two lobes—*exclusive* of the broad inner supra-orbital angles :—

1. Inner supra-orbital angles arched, much narrower than either of the frontal lobes :—

i. Frontal lobes distinct and independent : hand covered with squamiform markings, its outer surface costate .... *T. sima* [*T. arcuata*?]

ii. Median frontal notch indistinct : only the upper part of hand granular, its outer surface smooth or very indistinctly costate :—

a. Teeth of antero-lateral border of carapace acute, the last more prominent than the others ..... *T. poissonii* [? *T. sima.*]

b. Lobes of antero-lateral border square-cut, the last not enlarged ..... *T. chaptali.*

2. Inner supra-orbital angles straight or little arched, not much narrower than either of the frontal lobes :—

i. Crest of basal antenna-joint smooth : 4th tooth of antero-lateral borders of carapace rudimentary.. ..... *T. integra.*

ii. Crest of basal antenna-joint granular, denticulate, or spinose :—

a. Crest granular or dentate : 4th tooth of antero-lateral borders rudimentary : fingers rather stumpy .... *T. admeta.*

b. Crest granular or dentate : 4th tooth small : fingers sharp and as long as the palm ..... *T. savignyi.*

c. Crest spinose : 4th tooth somewhat smaller than the others : frontal lobes prominent, with their angles though rounded strongly pronounced..... *T. quadrilobata.*

II. The extreme extent of the basal antenna-joint is equal to, or less than, the major diameter of the orbit :—

A. Front cut into six lobes—*exclusive* of the inner supra-orbital angles :—

1. Antero-lateral borders of the carapace cut into five teeth, of which the fourth is rudimentary :—

i. All the frontal teeth clearly cut and on the same level, the middle pair much narrower than the submedian pair ..... *T. investigatoris.*

ii. The middle frontal teeth are not very clearly defined from, are on a lower plane and are not much narrower than, and are somewhat overlapped by the submedian pair *T. imparimanus.*

2. Antero-lateral borders cut into five teeth, of which the last two are much smaller than the others: all the frontal teeth clearly cut, the median on a lower plane and hardly narrower than the submedian pair..... .... *T. exetastica.*

B. Front cut into four lobes—*exclusive* of the inner supra-orbital angles :—

1. Median lobes of the front narrower than the lateral lobes :—

i. Front sinuous, the median lobes more prominent than the others :—

a. Median frontal lobes moderately prominent: antero-lateral borders of carapace cut into five teeth, of which the 4th is the smallest ..... *T. sexlobata.*

b. Median frontal lobes conspicuously prominent: antero-lateral borders cut into four teeth, of which the 3rd is the smallest ..... *T. hanseni.*

ii. Front perfectly straight: antero-lateral borders cut into five teeth of which the 4th is the smallest ... *T. intermedia.*

2. Median lobes of the front very much broader than the lateral lobes :—

i. Wrist with 3 sharp spinules on the outer surface, hand with granular costæ on outer surface, fingers about as long as the palm ..... *T. wood-masoni.*

ii. Outer surface of wrist and hand nearly smooth, fingers shorter than palm ..... *T. taprobanica.*

C. Front cut into two lobes—*exclusive* of he inner supra-orbital angles :—

1. Front very slightly convex, hardly prominent beyond the supra-orbital angles: carapace markedly transverse, its antero-lateral borders cut into five teeth of

which the last 2 are very much smaller than the first 3 ..... *T. oculea.*

[2. Front convex and markedly prominent beyond the supra-orbital angles: carapace little transverse, its antero-lateral borders cut into five teeth of nearly equal size ..... *Thalamonyx gracilipes*].

Thalamita prymna (Herbst) Kossmann.

The following names are, in my opinion, all synonymous, namely:—*T. prymna*, *T. crenata*, *T. danæ*, *T. stimpsoni* and *T. picta*. But as it is only occasionly that one encounters specimens that show a combination or confusion of characters I prefer, for convenience, to consider the usually accepted species as distinct. I believe, however, that Kossman's view as to the specific identity of all the Thalamitas with an eight-lobed front combined with a very broad basal antenna-joint, untenable as that opinion appears at first sight, is the correct one.

46. *Thalamita crenata* (Latr.) Edw.

Thalamita crenata, Latr., Milne Edwards, Hist. Nat. Crust. I. 461: Guérin in Cuvier, Icon. Règne An. Crust. Texte p. 6 (*cor. Thalamita admete* Guérin, Icon. Règne An. Crust. pl. i. fig. 4): Rüppell, 24 Krabben roth. Meer. p. 6, pl. i. fig. 2: Krauss, Sudafr. Crust. p. 25: Stimpson, Proc. Ac. Nat. Sci. Philad. 1859, p. 39: A. Milne Edwards, Archiv. du Mus. X. 1861 pp. 365, 367; Nouv. Archiv. du Mus. IV. 1868, p. 70 and IX. 1873, p. 166: Heller, SB. AK. Wien, XLIII. 1861, p. 356 and Novara Crust. p. 29: Martens, Verh. zool.-bot. Ges. Wien XVI. 1866, p. 381: Hilgendorf, MB. AK. Berl. 1878, p. 800: Hoffmann in Poilen and van Dam, Faun. Madagasc., Crust. p. 9: Lenz and Richters, Abh. senck. Ges. Frankf. XII. 1881, p. 422: Miers, Zool. H. M. S. Alert, pp. 184, 232, 518, 540; and Challenger Brachyura p. 199: Muller, Verh. Ges. Nat. Basel, VIII. 1876, p. 475: de Man, Journ. Linn. Soc., Zool., XXII. 1887-88 p. 79; and in Weber's Zool. Ergebn. Niederl. Ost-Ind. II. 1892, p. 285; and Zool. Jahrb., Syst., &c., VIII. 1894-95 p. 569: Cano, Boll. Soc. Nat. Napol. III. 1889, p. 218: Thallwitz, Abh. Zool. Mus. Dresden 1890-91, No. 3, p. 47: G. Pfeffer, Mitt. Naturhist. Mus. Hamburg, VII. 1890, No. 8, p. 7: Ortmann, Zool. Jahrb., Syst., VII. 1893-94, p. 86; and in Semon's Forschungsr. (Jena. Denk. VIII.) Crust. p. 46.

Thalamita prymna var. *crenata*, Richters in Möbius, Meeresf. Maurit. p. 153.

Carapace, length two-thirds the breadth, slightly convex, nearly smooth, crossed transversely by fine faint granular ridges—one, broken only by the cervical groove, between the last spines of the antero-lateral borders, one across the middle of the gastric region, and a series of four crescentic ridges (of which however the middle two are usually obsolete) defining the gastric region anteriorly.

Front cut into six rounded lobes of nearly equal size, not including

the arched inner supra-orbital angles each of which is as broad as any two of the true frontal lobes.

Antero-lateral borders cut into five clawshaped teeth of nearly equal size, or slightly decreasing in size from before backwards.

Posterior border of dorsal surface of carapace forming a curve with the postero-lateral borders, its length about one-third the greatest breadth of the carapace.

Orbits without any dorsal inclination, their major diameter about one-fifth the width of the interorbital space: the inner angle of their lower border dentiform and fairly prominent.

The basal antenna-joint is about two-ninths the greatest breadth of the carapace in extent, its orbital prolongation is in nearly the same straight line with its stem, and is traversed by a granular ridge.

Chelipeds a little unequal, the larger one in the male being about $2\frac{1}{4}$ times the length of the carapace, with a nearly smooth surface. Anterior border of arm with 3 enlarged spines and some granules, posterior border with a few squamiform granules only. Inner angle of wrist stoutly dentiform, outer surface with three teeth imperfectly united by costæ. Hand with five spines (most of which are blunt and sometimes become obsolescent), in two rows, on the upper surface—those of either row being more or less connected by a ridge which is in part granular: there are no other distinct ridges on the hand except a faintish one in the neighbourhood of the immobile finger. The fingers of the larger hand are not quite as long as the somewhat swollen palm, those of the smaller hand are as long as their palm.

Legs smooth, unarmed except for the usual spine at the far end of the posterior border of the merus of the last pair and for 2 or 3 denticles (which, however, are often absent) on the posterior border of the propodite of the last pair.

The 6th abdominal tergum of the male is broader than long and has gently curved sides.

Large males in the Indian Museum collection have the carapace about 40 millim. long and about 60 millim. broad.

In the Indian Museum are 34 specimens, from the Andamans, Mergui, Bombay, Karachi and the Persian Gulf (besides specimens from Penang, Singapore, Australia, and Samoa).

47. *Thalamita Danæ*, Stimpson.

Thalamita crenata, Dana, U. S. Expl. Exp. Crust. pt. I. p. 282, pl. xvii. figs. 7 *a-b*.

Thalamita Danæ, Stimpson, Proc. Ac. Nat. Sci. Philad. (1858) 1859, p. 39: A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 366, 367, pl. xxxvi. fig. 1: Miers, Cat. Crust. New Zealand, p. 29: Hilgendorf, MB. Ak. Berl. 1878, p. 800: Richters

in Möbius Meeresf. Maurit. p. 153: Tenison Woods, P.L.S., N. S. Wales, V. 1880-81, p. 118: Filhol, Crust. New Zealand, Miss. de l'île Campbell, p. 382: (?) de Man, Archiv. f. Naturges. LIII. 1887, i. p. 334; and Journ. Linn. Soc., Zool., XXII. 1887-88, p. 78 pl. iv. figs 8, 9; and in Weber's Zool. Ergebn. Niederl. Ost—Ind. II. 1892, p. 285; and Notes Leyden Mus. XV. 1893, p. 285; and Zool. Jahrb., Syst., VIII. 1894-95, p. 569.

Differs from *T. crenata* in the following particulars:—

(1) the carapace is nearly three-fourths as long as broad, its posterior border is nearer two-fifths than a third its greatest breadth, its transverse ridges are very distinct, and the four crescentic ridges near the anterior limit of the gastric region are all prominent, especially the middle two:

(2) the front, though otherwise similar, is more prominent:

(3) a large part of the upper surface of the arm and wrist and at least the dorsal half of the surfaces of the hand are granular,—the granules being more or less squamiform; the ridges that connect the spines of the wrist are distinct; there are 6 or 7 costæ on the hand, and the spines of the hand are much sharper:

(4) the 6th abdominal tergum of the male is much broader than long, and its sides are divergent in two-thirds of their extent and then suddenly converge.

In the Indian Museum are 20 specimens from the Andamans and Mergui.

48. *Thalamita prymna* (Herbst).

Cancer prymna, Herbst, Krabben, III. iii. 41, pl. lvii. fig. 2.

Thalamita prymna, Milne Edwards, Hist. Nat. Crust. I. 461: Krauss, Sudafr. Crust. p. 25: De Haan, Faun. Japon. Crust. p. 43, pl. xii. fig. 2: A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 360, 367, and Nouv. Archiv. du Mus. IX. 1873, p. 163: Hess, Archiv. f. Naturges. XXXI. 1865, i. pp. 140, 171: Hoffmann, in Pollen and van Dam Faun. Madagasc. Crust. p. 9: Kossmann, Crust. roth. Meer. p. 47 (part): Streets, Bull. U. S. Nat. Mus. VII. 1877, p. 108: Neumann, Cat. Pod. Crust. Heidelb. Mus. p. 24: de Man, Notes Leyden Mus. II. 1880, p. 180; and Archiv. f. Naturges. LIII. 1887, i. p. 333; and Journ. Linn. Soc. Zool. XXII. 1887-88, p. 75, pl. iv. figs. 5, 6; and in Weber's Zool. Ergebn. Niederl. Ost—Ind. II. 1892, p. 285; and in Zool. Jahrb., Syst., VIII. 1894-95, p. 567: Richters, in Möbius Meeresf. Maurit. p. 153: Miers, Ann. Mag. Nat. Hist. (5) V. 1880, p. 238; and Challenger Brachyura, p. 197: Sluiter, Tijds. Nederl. Ind. XL. 1881, p. 162: Haswell, Cat. Austral. Crust. p. 80: Ortmann, Zool. Jahrb., Syst., VII. 1893, p. 84; and in Semon's Forschungsr. (Jena. Denk. VIII.) Crust. p. 46: Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 372.

Thalamita crassimana, Dana, Proc. Ac. Nat. Sci. Philad. 1852, p. 85; and U. S. Expl. Exp. Crust. pt. I. p. 284, pl. xvii. figs. 9*a–d*: Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39.

Differs from *T. crenata* in the following particulars:—

(1) the carapace is even less convex, and, as in *T. Danæ*, its trans-

verse ridges are very distinct, moreover the mid-gastric ridge is continued, following the curves of the orbits, to the notch between the 1st and 2nd spines of the antero-lateral borders:

(2) the front is somewhat more prominent, the teeth are closer set and the four middle ones are remarkably square-cut:

(3) the teeth of the antero-lateral border end in spines and the fourth tooth is quite rudimentary and may even be altogether absent:

(4) the basal antenna-joint is nearer a fourth than two-ninths the greatest breadth of the carapace in extent, and its orbital prolongation is traversed by a row of spines of which from 1 to 3 are large:

(5) except that they are free from hair and that all the spines are large and much more acute, the chelipeds are like those of *T. Danæ*, but the granules on the upper surface of the arm are less numerous, and the faint ridge that separates the lower and inner surfaces of the hand in *T. Danæ* is absent:

(6) the propodite of the last pair of legs has its posterior border serrated throughout:

(7) the 6th abdominal tergum of the male is about as long as broad, and has gently convergent sides.

In the Indian Museum are 35 specimens, from the Andamans, Nicobars, Mergui, and Madras coast (besides 1 from Samoa).

49. *Thalamita picta*, Stimpson.

Thalamita picta, Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39: A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 362, 367, and Nouv. Archiv. du Mus. IX. 1873, p. 164, pl. iv. fig. 4: Hilgendorf, MB. Ak. Berl. 1878, p. 800: Miers, Zool. H. M. S. Alert, pp. 518, 540: Cano, Boll. Soc. Nat. Napoli, III. 1889, p. 217.

Differs from *T. prymna* in the following slight particulars:—

(1) the basal antenna-joint is not so broad and its crest is tooth-like, having a smooth entire edge:

(2) the two middle frontal teeth project more than the others.

In the Indian Museum there is a single specimen from the Andamans.

50. *Thalamita Stimpsoni*, A. M. Edw.

Thalamita stimpsoni, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 362, 367, pl. xxxv. fig. 4, and Nouv. Archiv. du Mus. IX. 1873, p. 164: ? Tozzetti, Magenta Crust. p. 71, pl v. figs. 4 *a–f*: Miers, Ann. Mag. Nat. Hist. (5) V. 1880, p. 238; and Zool. H. M. S. Alert, pp. 184, 232; and Challenger Brachyura, p. 198: Tenison Woods, P. L. S. N. S. Wales, V. 1880-81, p. 118: Haswell, Cat. Austral. Crust. p. 80: Müller, Verh. Nat. Ges. Basel VIII. 1886, p. 475: Cano, Boll. Soc. Nat. Napol. III. 1889, p. 217: Ortmann, Zool. Jahrb., Syst., VII. 1893-94, p. 85, and in Semon's Forschungsr. (Jena. Denk. VIII.) Crust. p. 46.

Differs from *T. prymna* in the following slight particulars :—

(1) the basal antenna-joint has a row of granules, but no spines :

(2) the inner supra-orbital angles are broader :

(3) the 4th spine of the antero-lateral border is usually not so complete a rudiment.

In the Indian Museum is one specimen from the Andamans (besides others from Singapore, Hongkong and Australia.)

This, as Miers has remarked, is one of the forms that supports Kossmann's view as to the identity of all the preceding species of *Thalamita*.

51. *Thalamita Chaptalii*, Aud. et Savign.

Portunus Chaptalii Audouin, Explic. p. 83 Savigny Descr. Egypte Crust. pl. iv. fig. 1.

Thalamita chaptalii, Milne Edwards, Hist. Nat. Crust. I. 460: A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 360, 367 : Miers, Zool. H. M. S. Alert, p. 231 (footnote) : Cano, Boll. Soc. Nat. Napol. III. 1889, p. 216.

? *Thalamita sima*, Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 373.

Carapace two-thirds as long as broad, pilose, considerably convex, the transverse ridges distinct and disposed as in the preceding species except that there is an additional one running across the cardiac region and on to the branchial region on either side, its endings on the branchial regions being the most distinct part of its course.

Front proper forming a broad shallow arch grooved but not deeply divided in the middle line : the inner supra-orbital angles, which have their anterior border curved, are very much less wide than the frontal lobes proper.

Antero-lateral borders cut into five teeth, of which the fourth, though considerably smaller, and the fifth, though somewhat smaller than the other three, are quite well developed : the first three teeth are somewhat square-cut, the first being very distinctly so.

The posterior border of the dorsum of the carapace is straight but forms a curve with the postero-lateral borders, its length is slightly more than a third the greatest breadth of the carapace.

Orbits without any particular dorsal inclination, their major diameter about one-fourth the width of the interorbital space : the inner angle of the lower border is not pronounced.

The basal antenna-joint is between a fifth and a sixth the greatest breadth of the carapace in extent, and is traversed by a low smooth crest.

Chelipeds about $2\frac{1}{4}$ times the length of the carapace : usually only two enlarged teeth—and those blunt—on the anterior border of the

arm, the posterior border and part of the upper surface granular: upper surface of wrist granular and costate, inner angle strongly spiniform, the usual spinules on the outer angle obsolescent. Hand rather full, upper surface granular, with the usual two parallel crests and five spines: the spines however are blunt and small, and the anterior two of the outer row are usually obsolete: except for a few indistinct costæ the other parts of the hand are smooth: the fingers are slightly longer than the hand, except in the larger cheliped of the adult male.

The merus of the last pair of legs is nearly twice as long as broad and has the usual spine on its posterior border: the same border of the propodite is smooth.

The sixth abdominal tergum of the male is a good deal broader than long and has the sides parallel or slightly divergent in at least two-thirds of their extent.

A small species: the largest male in the Indian Museum has the carapace 13 millim. long and a little less than 21 millim. in extreme breadth, and there are several egg-laden females a good deal smaller.

147 specimens from the Andamans (one take), besides several from Mauritius.

52. *Thalamita Poissonii*, Audouin et Savign.

Portunus Poissonii, Audouin, Explic. p. 84 Savigny, Descr. Egypt. Crust. pl. iv. fig. 3.

Thalamita Poissonii, de Man, Notes Leyden Mus. II. 1880, p. 181: Cano, Boll. Soc. Nat. Napoli, III. 1889, p. 216.

Differs from *T. chaptalii* in the following particulars:—

(1) the teeth of the antero-lateral borders are acute, and the last tooth is more spiniform and more prominent than the others:

(2) the posterior border of the propodite of the last pair of legs is armed with 2 or 3 small spinules:

(3) the teeth on the anterior border of the arm are acute.

In the Indian Museum are two specimens from the Persian Gulf. I much doubt that this is distinct from *T. chaptalii*.

53. *Thalamita sima*, Edw.

Thalamita sima, Milne Edwards, Hist. Nat. Crust. I. 460: Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39: A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 359, 367; and Nouv. Archiv. du Mus. IV. 1868, p. 70, and IX. 1873, p. 163: Miers, Cat. Crust. New Zealand, p. 28; and P.Z.S. 1879, pp. 20, 32; and Zool. H.M.S. Alert, pp. 184, 231, 518, 539; and Challenger Brachyura, p. 195: Kossmann, Reise roth. Meer., Crust. p. 50: Tozzetti, Magenta Crust. p. 78, pl. vi. figs. 1 *a–e*: Hilgendorf, MB. Ak. Berl. 1878, p. 800: Tenison Woods, P.L.S. N.S. Wales, V. 1880-81, p. 118: Haswell, Cat. Austral. Crust. p. 80: Filhol, Crust. New Zealand, Miss. île Campbell, p. 382: Muller, Verh. Nat. Ges. Basel, VIII. 1886, p. 475: ? de Man, Journ. Linn. Soc.,

Zool., 1887-88, p. 75, and Zool. Jahrb. Syst. VIII. 1894-95, p. 564: Cano, Boll. Soc. Nat. Napoli, III. 1889, p. 216: Walker, Journ. Linn. Soc., Zool., XX. p. 110: Ortmann, Zool. Jahrb. Syst. VII. 1893-94, p. 84, and in Semon's Forschungsr. (Jena. Denk. VIII) Crust. p. 46: ? J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 373.

Portunus (Thalamita) arcuatus, De Haan, Faun. Japon. Crust. p. 43, pl. ii. fig. 2.

Differs from *T. Chaptalii* in the following particulars:—

(1) the front proper, though arched as a whole, is distinctly divided into two broad shallow lobes the rounded outer angles of which are very distinctly separated from the supra-orbital angles:

(2) the antero-lateral borders are cut into 5 acute teeth of which the last is decidedly the largest and most prominent:

(3) the inner angle of the lower border of the orbit is more prominent:

(4) the chelipeds are everywhere more granular, their under surface especially being covered with transverse squamiform markings: the small spines on the outer surface of the wrist are well marked: the hand is everywhere covered with transverse squamiform markings and is very distinctly 6 or 7-costate, and on its upper surface are 5 distinct spines, of which 4 are large and acute.

In the Indian Museum is a single specimen from the Persian Gulf (besides 12 from Hongkong and Nagasaki).

Our specimens are undoubtedly the *Thalamita arcuata* of De Haan, which, according to A. Milne Edwards is synonymous with *T. sima* of Milne Edwards.

54. *Thalamita admeta* (Herbst) Edw.

Cancer admete, Herbst, Krabben III. iii. 40, pl. lvii. fig. 1.

Portunus admete Latr., Audouin Explic. p. 84, Savigny Descr. Egypt. Crust. pl. iv. fig. 4.

Thalamita admete, Cuvier Règne Animal Crust. pl. ix. fig. 2: Milne Edwards, Hist. Nat. Crust. I. 459: Krauss, Sudafr. Crust. p. 24: Dana, U. S. Expl. Exp. Crust. pt. I. p. 281, pl. xvii. figs. 5 a–c: Stimpson, Proc. Ac. Nat. Sci. Philad. 1858, p. 39: A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 356, 367; and Nouv. Archiv. du Mus. IX. 1873, p. 162: Heller, SB. Ak. Wien, XLIII. 1861, i. p. 355: and Crust. Südl. Europ. p. 79, pl. ii. fig. 17. (*fide* Guerin); and Novara Crust. p. 28; Streets, Bull. U. S. Nat. Mus. VII. 1877, p. 105: Hilgendorf, MB. Ak. Berl. 1878, p. 799: Richters in Möbius Meeresf. Maurit. p. 153: Miers, Zool. H. M. S. Alert, pp. 183, 230; and Challenger Brachyura, p. 194: Carus, Prod. Faun. Medit. p. 515, (*fide* Guerin): de Man, Archiv. f. Naturges. LIII. 1887, i. p. 332; and in Weber's Zool. Ergebn. Niederl. Ost.—Ind. II. 1892, p. 285: Thallwitz, Abh. Zool. Mus. Dresden 1890–91, No. 3, p. 46: Ortmann, Zool. Jahrb., Syst., VII. 1893–94, p. 83; and in Semon's Forschungsr. (Jena. Denk. VIII) Crust. p. 46: J. R. Henderson, Trans. Linn. Soc. Zool. (2) V. 1893, p. 372: Whitelegge, Mem. Austral. Mus. III. 1897, p. 138.

Thalamita savignyi, A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 357 and 367, and Nouv. Archiv. du Mus. IX. 1873, p. 163: Kossmann, Reise roth. Meer. Crust. p. 49: de Man, Notes Leyden Mus. II. 1880, p. 180, and III. 1881, p. 99; and Journ. Linn. Soc. Zool. XXII. 1887–88, p. 73; and Zool. Jahrb., Syst. etc., VIII. 1894–95, p. 564: Cano, Boll. Soc. Nat. Nap. III. 1889, p. 215: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 372: Ortmann in Semon's Forschungsr. (Jena. Denk. VIII). Crust. p. 46.

Carapace only about five-ninths to three-fifths as long as broad, pilose, flat, crossed transversely by granular ridges which have the same disposition as in *T. danæ*, *crenata*, etc., except that, as in *T. chaptalii*, *sima* etc., there is an additional one across the cardiac region and extending, with an interruption, on to either branchial region.

Inter-orbital space divided into four square-cut lobes of nearly equal width: the middle two, which form the front proper, are laminar and are considerably the more prominent: the outer two, which are the broad inner supra-orbital angles, have a straight, or inappreciably curved anterior border.

Antero-lateral borders cut into 5 acute claw-like teeth, of which the 4th is much smaller than the others and is often rudimentary.

The posterior border of the dorsum of the carapace forms a curve with the postero-lateral borders: its length is a little less than a third the greatest breadth of the carapace.

The orbits have no particular dorsal inclination, their major diameter is about a fifth the width of the inter-orbital space, the inner angle of their lower border is bluntly dentiform.

Basal antenna-joint nearly a fourth the greatest breadth of the carapace in extent: its orbital extension traversed by a serrated crest.

Chelipeds unequal in the adult male. Three enlarged teeth on the anterior border of the arm: the posterior border granular in its distal half. Upper and outer surface of wrist costate and slightly granular, 2 or 3 spinules at the outer angle, the inner angle strongly spiniform. Hand full and deep, with 5 costæ on the upper and outer surfaces: on the upper two costæ are altogether 6 spines, of which the distal two are the smallest: the other surfaces of the hand are generally smooth, but there may be a faint bulge or ridge along the inner surface and an incomplete line of granules along the lower border. Fingers a good deal shorter than the hand (especially in the larger cheliped) rather stumpy, and though sharp-pointed showing an inclination to be channelled along the inner surface: the dactylus is decidedly hook-like.

In some individuals the hand, except for the two spinose costæ on the upper surface and for traces of two costæ on the outer surface, is quite smooth. In others there are only four distinct spines on the hand,—the two small ones immediately behind the finger-joint being

obsolescent. In the variety *savignyi* the hand is not particularly full or deep, and the fingers, which are as long as the hand, are not channelled along the inner surface.

The merus of the last pair of legs is nearly twice as long as broad and has the usual spine near the far end of the posterior border; the posterior border of the propodite of this pair is serrated throughout.

The 6th abdominal tergum of the male is not much broader than long, its sides are slightly but gradually convergent.

The carapace of an average male in the Indian Museum is 15 millim. long and 26 millim. broad, but there is a specimen much larger than this from the "South Seas."

In the Indian Museum are 45 specimens from the Andamans, Mergui, Palk Straits and Persian Gulf.

Three varieties of this species are recognizable, but the differences between them are very inconstant and are not, in my opinion, of specific value:—

(1) *Thalamita admeta* (Herbst). "Der Hand ist gross, *auf der aussern Wölbung gekornt.*"

(2) *Thalamita admeta* A. M. Edw. "Main portant.....sur la face externe deux crêtes peu marquées et lisses."

(3) *Thalamita savignyi* A. M. Edw., which differs in the following particulars:—

(*a*) the transverse ridges of the carapace are in sharper relief: (*b*) the division between the 2 true frontal lobes is not always broad and deep: (*c*) the fourth tooth of the antero-lateral borders, though smaller than the others, is not rudimentary: (*d*) the hand is not particularly full and deep, and its inner surface is sometimes granular, all the granular costæ of the outer surface being well-marked also: (*e*) the fingers are straighter, are as long as the palm, and have no particular channelling of the inner surface.

55. *Thalamita quadrilobata*, Miers.

Thalamita quadrilobata, Miers, Zool. H. M. S. "Alert," pp. 518, 539, pl. xlviii. fig. B; and Challenger Brachyura, p. 194.

Differs from *T. admeta* in the following particulars:—

(1) the carapace is not quite so broad, its length being about three-fifths its breadth:

(2) the two lobes that form the front proper project very much more beyond the two lobes that form the supra-orbital angles and their free edges are so concave and their angles therefore are so pronounced that the front (not including the supra-orbital angles) appears four-lobed:

(3) the fifth tooth of the antero-lateral borders though smaller than the others is by no means a rudiment:

(4) the crest of the basal antenna-joint is armed with a row of 3 large spines like those of *T. prymna*.

(5) the hands and fingers are like those of the *var. savignyi*: i.e., the hand is distinctly costate, some of its inner surface is granular, and the fingers are as long as the hand and have no particular channelling of the inner surface.

In the Indian Museum there is a single specimen from the Andaman Islands: the length of the carapace is 22 millim., its breadth 35 millim.

This form is probably only a variety of *T. admeta*.

56. *Thalamita integra*, Dana.

Thalamita integra, Dana, Proc. Ac. Nat. Sci. Philad. VI. 1852, p. 85 and U. S. Expl. Exp. Crust. pt. I. p. 281, pl. xvii. figs. 6 *a–d*: Stimpson, Proc. Ac. Nat. Sci. Philad., 1858, p. 39: A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 358, 367, and in Maillard's l'ile Réunion, Annexe F. p. 2: Streets, Bull. U. S. Nat. Mus. VII. 1877, p. 107: Hilgendorf, MB. Ak. Berl. 1878, p. 799: Richters in Möbius Meeresf. Maurit. p. 153: Miers, Zool. H. M. S. Alert, pp. 518, 540, and Challenger Brachyura, p. 195: de Man, Journ. Linn. Soc., Zool., XXII. 1887-88, p. 74: Cano, Boll. Soc. Nat. Nap. III. 1889, p. 215: Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 373: Whitelegge, Mem. Austral. Mus. III. 1897, p. 138.

Closely allied to *T. admeta* from which it can be recognized by the following characters:—

(1) the carapace is not quite so broad and is distinctly convex: it is bare of tomentum and the transverse ridges are much less distinct, the one that crosses the cardiac region being obsolescent or absent:

(2) the crest of the basal antenna-joint has a sharp entire edge:

(3) the surface of the chelipeds is smooth and polished: the costæ of the wrist are worn and in great part obliterated, and the usual 3 spines at the outer angle of this joint are indistinct blunt points: the hand is quite smooth; the inner border of its upper surface is crest-like and bears two teeth, there is a blunt tooth in the usual place in front of the apex of the wrist-joint, and in front of this are one or two blunt tubercles; there may also be a smooth ridge running along the distal two-thirds of the lower border of the hand:

(4) the 6th abdominal tergum of the male is much broader than long.

In the Indian Museum are two specimens—from Mergui and the Andamans (besides a "Challenger" duplicate from Honolulu).

57. *Thalamita investigatoris*, n. sp.

Carapace about two-thirds as long as broad, covered with a velvet-

like pile, crossed by transverse ridges disposed as in *T. sima*, *admeta*, etc.—*i.e.*, there is an additional ridge extending across the cardiac and neighbouring parts of the branchial regions—but they are all faint.

Front cut into six lobes (*not* including the inner supra-orbital angles) very similar to those of *Charybdis* (=*Goniosoma*) *callianassa*, i.e., the middle two are narrow rounded and more prominent than the others, the next on either side are broad, and the third on either side are very narrow and are subacute.

Antero-lateral borders straight, cut into 5 acute teeth (including, as usual, the outer orbital angles) of which the first 3 are large, the 5th very small, and the 4th a rudiment.

Posterior border straight, but forming a curve with the postero-lateral borders, its length hardly more than two-fifths the greatest width of the carapace.

Orbits large, their major diameter more than two-fifths the width of the interorbital space: the inner angle of the lower border not denti-form.

The basal antenna-joint is not equal to the major diameter of the orbit in its extreme extent: its crest is low and denticulated.

Chelipeds markedly unequal in the adult male, their upper surface with close-set vesicular granules: two or three enlarged spines on the anterior border of the arm, none on the posterior border: inner angle of wrist spiniform, two or three minute points on the outer angle: hand not costate, with only two distinct spines,—one being in front of the apex of the wrist-joint, the other, which is the larger, being some way behind the finger joint: [the other spines usually present in *Thalamita*, if present, are not distinguishable from the general granulation]. Fingers shorter than the hand, especially in the larger cheliped.

First 3 pair of legs long and slender, banded with brown. The merus of the last pair is more than twice as long as broad and has the usual spine on the posterior border: there are also a few spinules on the posterior border of the propodite of this pair.

Sixth abdominal tergum of male a good deal broader than long, its sides parallel in their proximal half and then suddenly converging.

A single male from off Ceylon, 34 fathoms.

A small species, the carapace being 8 millim. long, and 11·5 millim. broad.

58. *Thalamita exetastica* n. sp.

Closely resembles *T. investigatoris*, from which it differs in the following particulars:—

(1) the median frontal teeth are on a lower plane than, and are almost as broad as, the submedian teeth:

(2) the teeth of the antero-lateral border gradually decrease in size from before backwards, the 4th and 5th being extremely small; moreover there is a tiny tooth cut in the base of the first, somewhat after the manner of *Goniosoma orientale*, but very much smaller:

(3) the carapace is three-quarters as long as broad, and the length of the posterior border is more than half the greatest breadth of the carapace:

(4) all surfaces of the chelipeds, except that part of the upper surface of the arm that is concealed by the carapace, are covered with transverse squamiform markings; the hand is costate and there are at least 4 distinct spines on its upper surface, two of which along the inner border are particularly large; the fingers are as long as the palm.

(5) the legs are not particularly long and slender; the merus of the last pair is about two-thirds as broad as long, and the posterior border of the propodite is smooth.

A mature female and a young male from off the Malabar coast, 26–31 fms.

A small species, the carapace being 9 millim. long and 12 millim. broad. It is more nearly related to *Charybdis* (=*Goniosoma*) than is any other of these small Thalamites with reduced basal antenna-joint.

59. *Thalamita imparimanus*, n. sp.

Closely resembles *T. investigatoris*, from which it differs in the following particulars:—

(1) the transverse ridges of the carapace are prominent:

(2) the median frontal teeth are about as broad as, are on a lower plane than, and are to some extent overlapped by, the submedian teeth:

(3) the basal antenna-joint is quite *Goniosoma*-like, its greatest extent being less than half the major diameter of the orbit: its crest is almost indistinguishable:

(4) the chelipeds, though otherwise similar, have the inequality in the male even more marked and there are no points on the outer angle of the wrist that are distinct from the general granulation:

(5) the legs are even longer and slenderer, and the posterior border of the propodite of the last pair is smooth:

(6) the line of junction between the 6th and 7th abdominal terga of the male is concave instead of straight.

Three specimens from off the Ganjam coast, 35 fathoms.

The carapace of the largest is 7 millim. long and 10 millim. broad.

60. *Thalamita sexlobata*, Miers.

Thalamita sexlobata, Miers, Challenger Brachyura, p. 196, pl. xvi. fig. 2: Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 373.

Carapace nearly three-fourths as long as broad, flattish, closely pilose, the transverse ridges distinct and disposed as in *T. sima*, *admeta* and *investigatoris*.

Front cut into 4 lobes (*not* including the supra-orbital angles) of which the middle pair are the narrowest and slightly the most prominent and on a slightly lower plane, while the outer pair are the broadest, being also broader than the arched supra-orbital angles from which they are separated by a distinct notch.

Antero-lateral borders cut into 5 teeth, of which the first is the largest and the fourth is a mere rudiment, while the fifth is sometimes smaller and sometimes larger than the third.

Posterior border of the usual shape, its length is nearly half the greatest breadth of the carapace.

Orbits large, with a somewhat dorsal inclination, their major diameter is about a third the width of the inter-orbital space: the inner angle of the lower border not dentiform.

Basal antenna-joint about equal to the major diameter of the orbit in extreme extent: its crest is low and either entire or finely granular.

Chelipeds pilose, covered with transverse squamiform markings. Two enlarged spines on the anterior border of the arm, none on the posterior border. Inner angle of wrist strongly spiniform, three spinules on outer angle. Hand costate$_2$ with 4 or 5 (usually 4) spines, of which the most conspicuous are the 2 along the inner border of the upper surface. Fingers of the smaller cheliped rather longer, of the larger cheliped rather shorter, than the hand.

First 3 pair of legs with transverse squamiform markings on the upper surface. In the last pair the merus is nearly twice as long as broad and has the usual spine on the posterior border, and the same border of the propodite is smooth.

Sixth abdominal tergum of male with arched sides, the tergum being broader than long and much broader at its base than at its far end, though the base is not quite the broadest part.

In the Indian Museum are 15 specimens, from the Arakan coast, Andamans, and Persian Gulf. The carapace of an egg-laden female is 9 millim. long and 12·5 millim. broad.

61. *Thalamita Hanseni*, n. sp.

Carapace two-thirds as long as broad, slightly convex, somewhat pilose, crossed by transverse ridges which have the same disposition as in *T. admeta*, *sexlobata* etc.

Front deeply cut into 4 lobes (*not* including the inner supra-orbital

angles) of which the middle two are narrow rounded and prominent beyond the outer two which are broad: the latter are well separated from the supra-orbital angles, which are arched and are about the same breadth as the middle frontal lobes.

Antero-lateral borders cut into 4 acute teeth (*including* the outer orbital angles) of which the first and last are the largest.

Posterior border of dorsum of carapace straight, but forming a curve with the postero-lateral borders, its length is half the greatest width of the carapace.

Orbits large, their major diameter about two-fifths the width of the inter-orbital space, the inner angle of their lower border is not dentiform, and they have no particular dorsal inclination.

Basal antenna-joint less than the major diameter of the orbit in extreme extent, its crest is smooth.

Chelipeds of usual form: three spines on the anterior border of the arm, none on the posterior border, the distal half of the upper surface with squamiform markings: inner angle of wrist strongly spiniform, three spinules on the outer angle: hand with 5 spines, in the usual position, the two behind the finger-joint the smallest, there are 2 or 3 obscure costæ and some indistinct squamiform markings on the outer surface: fingers shorter than the palm, especially in the larger cheliped.

Legs slender: the merus of the last pair is more than twice as long as broad and has the usual spine on the posterior border, the same border of the propodite of this pair has 2 or 3 spinules.

6th abdominal tergum of male much broader than long, with gradually convergent sides.

Three specimens were dredged by a Danish Expedition off Trincomalee in 2 fathoms, and have been very kindly lent to me for examination by Dr. H. J. Hansen. The carapace of the largest specimen is 6 millim. long and 9 millim. broad.

62. *? Thalamita intermedia*, Miers.

Thalamita intermedia, Miers, Challenger Brachyura, p. 196, pl. xvi. fig. 1: Ortmann, in Semon's Forschungsr. (Jena. Denk. VIII.) Crust. p. 46.

"The carapace is broadly transverse, and is covered with a close, whitish pubescence, the transverse ridges which cross its dorsal surface are not more distinct than in *Thalamita admete* to which species and to *Thalamita savignyi*, *Thalamita intermedia* is nearly allied.

"Of the six lobes of the front the median are smallest, and separated by a narrow and rather deep incision, the submedian and lateral are subequal, the latter slightly overlapping the former; the lateral lobes project somewhat less than the others.

"The five spines of the antero-lateral margin are all well developed, but the three anterior are very slightly larger than the fourth and fifth.

"The basal antennal joint is very distinctly granulated; the maxillipeds present nothing remarkable.

"The chelipeds in the male are subequal, the merus or arm with three spines on its anterior margin, of which the two nearest to the distal extremity are largest; wrist with a strong spine on its inner margin and three small spinules on its outer surface, palm with three or four spines disposed alternately in two series, on its upper surface, and with three granulated ridges on its outer surface, between which are other granules, as in *Thalamita savignyi*; the fingers are somewhat shorter than the palm, and irregularly denticulated on their inner margins.

"The ambulatory legs slender and slightly compressed; the fifth legs shaped much as in *Thalamita admeta* and *Thalamita savignyi*, with a spine near the distal end of the inferior margin of the merus-joint, and with the inferior margin of the penultimate joint armed with a very distinct series of small spinules.

Colour (in spirit) pinkish-brown; pubescence whitish."

The above is Miers' description, which I have copied, as I am not perfectly sure of the identity of our specimen. It should be added that the basal antenna-joint is "*Goniosoma*"-like, its extreme extent being less than the major diameter of the orbit, and that the front is cut perfectly straight.

In the Indian Museum is a single egg-laden female from off Ceylon 34 fms. The carapace is 5·5 millim. long and 9 millim. in extreme breadth.

63. *Thalamita Wood-Masoni*, n. sp.

Carapace nearly three-fourths as long as broad, convex, crossed transversely by ridges, which have the same disposition as in *T. sima*, *T. admeta*, *T. investigatoris*, etc., and are all very distinct and straight.

Front cut into 4 rather obscurely marked lobes (*not* including the inner supra-orbital angles) of which the two middle ones are very broad and the two lateral ones very narrow: the inner supra-orbital angles, which are well arched, are broader than the lateral lobes of the front but much narrower than the median lobes.

Antero-lateral borders nearly straight, cut into 5 sharp teeth, of which the 4th is rudimentary and is visible only when the carapace is denuded of its close pile.

Posterior border of dorsum of carapace straight but forming a curve with the postero-lateral borders, its length is rather more than two-fifths the greatest breadth of the carapace.

Orbits without any particular dorsal inclination: their major diameter nearly a third the width of the inter-orbital space: the inner angle of the lower border not dentiform.

Basal antenna-joint about equal to the major diameter of the orbit in extreme extent, traversed by a low microscopically-granular crest.

Chelipeds rather pilose: the arm has 3 spines on the anterior border, none on the posterior border, the exposed part of its upper surface has some squamiform granules: wrist costate and granular, its inner angle spiniform, 3 sharp spinules on its outer angle: hand with numerous granular costæ, and with 5 sharp and very distinct spines in the usual position: fingers about as long as the hand in the smaller cheliped, shorter than the hand in the larger cheliped.

Merus of last pair of legs slender, more than twice as long as broad, with the usual spine on the posterior border: the posterior border of the propodite of the same pair has some spinules.

The 6th abdominal tergum of the male is a good deal broader than long, its sides are suddenly convergent near the distal end and its distal border is concave.

In the Indian Museum is a single specimen from the Andamans. Among the specimens kindly lent me for examination by Dr. H. J. Hansen of the Copenhagen Museum is a male from Paumban (Palk Str.).

A small species: carapace 9 millim. long, 12·5 millim. broad.

Thalamita Wood-Masoni var. *taprobanica.*

Differs from *T. Wood-Masoni*, type, much as *T. admeta* differs from var. *T. savignyi*:—

(1) the frontal lobes are deeper cut:

(2) the sculpture of the chelipeds is much less distinct: the squamiform markings on the arm wrist and hand, and the costæ of the wrist and hand are much worn; the spinules on the outer angle of the wrist are blunt and obsolescent; and the spines on the upper surface of the hand are small and blunt—the anterior two of the outer row being smaller and blunter than the others; the fingers are much shorter.

In the Indian Museum is a single specimen from Ceylon.

64. *Thalamita oculea* n. sp.

Carapace rather more than two-thirds as long as broad, closely and densely pilose. When denuded, the transverse ridges are prominent and more numerous than in any other Indian species, because besides the ridges found in *T. danæ* etc., and besides the additional ridge across the cardiac and neighbouring part of the branchial regions found in

T. sima, *admeta* etc., there is—behind all—another short ridge or linear tubercle on either branchial region.

Front proper straight, obscurely divided into 2 lobes (*not* including the inner supra-orbital angles) by a notch that needs looking for with a lens. The inner supra-orbital angles are arched and their breadth is not half that of either of the true frontal lobes.

Antero-lateral borders nearly straight, cut into 5 teeth, of which the first is the largest and the last two (which are co-equal) are very much smaller than any of the others.

Posterior border of dorsum of carapace straight, but forming a curve with the postero-lateral borders; its length is rather more than half the greatest breadth of the carapace.

Orbits with a distinctly dorsal inclination, large—their major diameter being little less than half the width of the inter-orbital space—the fissures in the upper border obscure, the inner angle of the lower border not dentiform.

Basal antenna-joint Goniosoma-like, its extreme extent being much less than the major diameter of the orbit, its crest low and smooth.

Chelipeds pilose, covered with transverse squamiform markings: 2 enlarged teeth on the anterior border of the arm, none on the posterior border: inner angle of wrist strongly spiniform, 2 or 3 inconspicuous denticles on the outer angle: hand costate, with 4 or 5 (usually 4) spines, of which only three (namely, the one in front of the apex of the wrist-joint and the two along the inner border of the upper surface) are visible to ordinary observation, the other 1 or 2 being lost in the general squamiform granulation.

Legs pilose, the first 3 pair with squamiform sculpture on the upper surface: in the last pair the merus is nearly twice as long as broad, and has the usual spine on its posterior border, and the propodite has a smooth posterior border.

Sternum with numerous transverse grooves—a sort of scutiform sculpture—most conspicuous in the male.

6th abdominal tergum of male a good deal broader than long, with gradually convergent sides.

7 specimens from off Ceylon, 28–34 fms., 1 from off Malabar coast 26–31 fms., 3 from the Andaman Sea.

A small species: the carapace of the largest egg-laden female is 9 millim. long and 13 millim. broad.

Alliance III. *Podophthalmoida.*

Podophthalmus, Lamk.

Podophthalmus, Lamarck, Syst. Anim. sans. Vert. V. p. 152, and Hist. Nat.

Anim. sans. Vertebr. V. p. 255 : Latreille, Hist. Nat. Crust. VI. p. 53 : Leach, Zool. Miscell. II. p. 147 : Desmarest, Consid. Gen. Crust. p. 99 : Milne Edwards, Hist. Nat. Crust. I. 465 : De Haan, Faun. Japon. Crust. p. 10 : A. Milne Edwards, Ann. Sci. Nat., Zool., (4) XIV, 1860, pp. 283, 228, and Archiv. du Mus. X. 1861, p. 419 : Miers, Challenger Brachyura, p. 207.

Carapace extremely broad. Its antero-lateral borders are almost transverse in the greater part of their extent and then turn obliquely backwards to end in a large spine ; they are deeply grooved along their whole extent to receive the enormously elongate eye-stalks. The groove is an extension of the true orbit, which also encroaches on the dorsal surface of the front, so that the true front comes to lie beneath the roots of the eye-stalks, cut off from the rest of the carapace except for a narrow isthmus left between the eye-stalks.

The true front, which thus lies below the eye-stalks but in its normal relation to the antennules and antennæ, is extremely narrow.

Close behind the spine that terminates the antero-lateral border is another, smaller, spine.

The eyes are borne on slender basal stalks of peculiar length : the orbits, as already explained, occupy the whole extent of the antero-lateral border, even extending on to the lateral epibranchial spine. The antennules are lodged in fossæ beneath the front, into which they are not completely retractile.

The antennæ are also in their normal position in the wide orbital hiatus : the basal joint is short, the flagellum long and slender.

The epistome though short, or even linear, and though encroached upon by the external maxillipeds, is well defined. Buccal cavern squarish broader than long : efferent branchial channels ill defined.

Chelipeds legs and abdomen as *Neptunus*.

As M. A. Milne Edwards has remarked *Podophthalmus* is merely an abnormal *Neptunus*.

65. *Podophthalmus nacreus*, n. sp.

Carapace broadly hexagonal, approaching the oblong-quadrate, its length just over half its breadth (lateral spines included) its regions fairly well delimited, its surface finely granular.

Front proper (that is, the piece almost cut off from the rest of the carapace by the encroachment of the eye-stalks) horizontal, distinctly bilobed, its breadth about a sixth that of the carapace (spines included).

Antero-lateral borders distinctly arched, or angularly bent, the lower edge of the groove for the eye-stalks very prominent and forming almost a quadrant of a broad ellipse, the lateral epibranchial spine short—its length about half the width of the front.

Postero-lateral borders not at all strongly convergent, the spine at their anterior end sharply carinate. Posterior border straight, its length is half the greatest width of the carapace (spines included).

Eyes, with the eye-stalks, well over half the greatest breadth of the carapace (spines included).

The maxillipeds in repose almost close the mouth, a narrow space being left between them: the antero-external angle of the merus produced and lobe-like. Epistome almost linear.

Chelipeds in the male nearly three times the greatest length of the carapace: anterior border of arm with a row of spines the distal 2 of which are enlarged, posterior border with 2 enlarged spines in its distal half: inner angle of wrist strongly spiniform, a spine followed by a carina along the outer surface of wrist: hand very sharply carinated on the upper and outer surfaces, armed with 2 spines—one in front of the apex of the wrist-joint, the other behind the finger-joint: dactylus very little shorter than the palm.

First 3 pair of legs slender: a short spine on the posterior border of the merus of the 4th pair.

2nd and 3rd abdominal terga carinate in both sexes: 6th tergum in the male much broader than long, with converging sides.

Colours in spirit yellowish; the edges of the carapace, the crests and spines of the chelipeds, and the carinæ of the abdomen have much the same nacreous sheen as in *Neptunus argentatus*.

In the Indian Museum are 3 specimens from the Andamans, and one from the Gulf of Martaban 53 fms. The carapace of the largest specimen is 12 millim. long and 23 millim. broad.

This species in several respects approaches *Euphylax*. It differs from *Podophthalums vigil* in the following particulars:—

(1) the carapace is almost oblong-quadrate, its antero-lateral borders are curved or angularly bent, its surface is granular and its regions better defined:

(2) the buccal cavern is squarer and is more nearly closed by the external maxillipeds, the antero-external angle of the merus of which is produced to form a lobule: the epistome is linear:

(3) the front is horizontal and bilobed:

(4) the lateral epibranchial spine is much shorter:

(5) the hand is very sharply carinated and the fingers are nearly as long as the palm.

Family CANCRIDÆ.

Cancerieus arquds (*Pseudocarcinus* and *Pirimela* only) Milne Edwards Hist. Nat. Crust. I. 371: and *Corystiens*(part) Milne Edwards, *op. cit.* II. 139.

Cyclinea and *Corystoidea* (part) Dana, U. S. Expl. Exp. Crust. pt. I. pp. 294 and 296 : Miers, Challenger Brachyura, pp. 208 and 209.

Cancrini (exc. *Carcinus*) and *Xanthini* (*Thiidæ* only) Ortmann, Zool. Jahrb. Syst. VII. 1893-94, pp. 421 and 428.

Carapace moderately convex, either broadly transversely-oval (as in the *Cancrinæ*) or elongate-oval or subcircular or (rarely) somewhat hexagonal, the regions rarely strongly defined and rarely areolated.

Front not very broad, commonly cut into 3 teeth, which are sometimes prominent: [sometimes (*Thiinæ*) the front is subentire or bilobed ; in *Acanthocyclus* it is triangular and pointed.]

The antennules always fold longitudinally.

Antennal flagella usually long, coarse, and setaceous [absent in *Acanthocyclus*, short and slender in *Kraussia*].

Epistome usually sunken, always more or less overlapped by the external maxillipeds which are often somewhat elongate.

Legs gressorial.

Sternum narrow.

I propose to divide the Cancridæ into the following five subfamilies :—

Subfamily I. *Cancrinæ.* Carapace broadly transverse, oval, the antero-lateral borders cut into many teeth or puckers, the regions either not defined or fairly well defined and areolated. Front cut into 3 teeth. Buccal orifice about square. Epistome but slightly sunken and slightly overlapped by the external maxillipeds, which completely close the mouth and have the merus not elongate. Basal antenna-joint fixed.

Constituent genera :—

1. **Cancer*, Lamk., Leach, A. Milne Edwards Nouv. Archiv. du Mus. I. 1865, p. 185.

2. *Metacarcinus*, A. Milne Edwards, Nouv. Archiv. du Mus. I. 1865, p. 201.

3. *Trichocarcinus*, Miers, P.Z.S. 1879, p. 34 (=*Trichocera*, De Haan, Faun. Japon. Crust. p. 16).

Subfamily II. *Pirimelinæ.* Carapace somewhat hexagonal, not transverse, regions very well defined and areolated, antero-lateral borders cut into 5 teeth. Front cut into 3 teeth. Buccal orifice moderately elongate. Epistome a good deal sunken and much overlapped by the external maxillipeds which completely close the mouth. Basal antenna-joint fixed.

Includes a single genus, namely

* *Pirimela*, Leach, Milne Edwards, Hist. Nat. Crust. I. 423.

Subfamily III. *Thiinæ.* Carapace subcircular the regions not defined, antero-lateral borders entire or denticulate. Front entire, or cut into two lobes which may again be subdivided into two lobules. Buccal orifice moderately elongate, the external maxillipeds, which completely cover the mouth, encroach somewhat on the very short epistome. Basal antenna-joint fixed.

Constituent genera :—

1. *Thia*, Leach : Milne Edwards, Hist. Nat. Crust. II. 143.
2. *Kraussia, Dana.

Subfamily IV. *Atelecyclinæ.* Carapace subcircular, often a little longer than broad, the regions usually fairly or well defined, not much areolated, antero-lateral borders usually with teeth. Front usually cut into 3 (sometimes 2 or 4) teeth which are often prominent. Buccal orifice elongate, not completely covered by the external maxillipeds which are elongate—especially as to their merus—and overlap or completely conceal the sunken epistome. Basal antenna-joint either fixed or slightly movable.

Constituent genera :—

1. * *Atelecyclus*, Milne Edwards, Hist. Nat. Crust. II. 141.
2. *Erimacrus*, Benedict Proc. U. S. Nat. Mus. XV. 1892, p. 229 (=Podacanthus, Brandt, Bull. Phys. Math. Acad. Petersb. VII. 1849, p. 180).
3. * *Hypopeltarium*, Miers, Challenger Brachyura, p. 210 (=*Peltarion*, Lucas in Jacquinot's Voy. Astrolabe au Pol. Sud., Zool. III. Crust. p. 80).
4. *Pliosoma*, Stimpson, Ann. Lyc. Nat. Hist. New York, VII. 1862, p. 227.
5. * *Telmessus*, White Ann. Mag. Nat. Hist. XVII. 1846, p. 497 and Samarang Crust. p. 14 (=*Platycorystes*, Brandt, Bull. Phys. Math. Acad. Petersb. VII. 1848, p. 179 : =*Cheiragonus*, Latr.).
6. * Trachycarcinus, Faxon.
7. * Trichopeltarium, A. Milne Edwards.

Subfamily V. *Acanthocyclinæ*, carapace subcircular. Front ending in a triangular point. Epistome short sunken, completely concealed by the external maxillipeds which also completely cover the buccal orifice. Antennal flagella absent. For the single genus

Acanthocyclus, Milne Edwards and Lucas, Voy. Amer. Merid. Crust. p. 29.

[? Subfamily *Trichiinæ* for *Trichia* De Haan, Faun. Japon. Crust. p. 109, which may however be the type of a distinct family.]

In the foregoing lists the genera known to me by autopsy are marked with an asterisk and Indian genera are printed in Roman type. I have made no attempt to split the Subfamilies into "alliances" as I have not sufficient material at my disposal for such a purpose.

Subfamily THIINÆ.

Kraussia, Dana.

Kraussia, Dana, Silliman's Amer. Journ. Sci. and Arts. XIII. 1852, p. 120, and U. S. Expl. Exp. Crust. pt. I. p. 300.

Carapace not much broader than long, not concealing the first three abdominal terga even in the male, subcircular but with the antero-lateral borders much longer than the postero-lateral, and the latter rather strongly convergent and slightly concave: the regions not defined.

Front well separated from and prominent beyond the inner supra-orbital angles, almost horizontal, cut into two lobes which may, or may not, be again divided into two lobules.

The antennules fold alongside their basal joint, much nearer the longitudinal than the transverse.

The basal antenna-joint touches the front and occupies all the space between the antennulary pits and the orbit: the flagellum, which is short and slender, stands in the orbital hiatus.

Buccal cavern squarish, a little elongate: the external maxillipeds—of which the merus is not elongate—slightly overlap the epistome, which though short and sunken is well enough defined. No ridges on the palate to define the efferent branchial channels.

Chelipeds massive, short and stumpy with particularly stumpy fingers.

Legs short and stout, ending in blade-like dactyli.

The abdomen of the male consists of 5 segments, the 3rd–5th terga being fused.

Sternum narrow.

Key to the Indian species of Kraussia.

I. Carapace somewhat broad, its frontal and antero-lateral borders conspicuously dentate: front bilobed ..... *K. integra.*

II. Carapace somewhat elongate, its frontal and antero-lateral borders minutely denticulate: front four lobed ..... *K. nitida.*

1. *Kraussia integra* (De Haan).

Cancer (*Xantho*) *integer*, De Haan, Faun. Japon. Crust. p. 66, pl. xviii. fig. 6.

? Kraussia rastripes, F. Müller, Verh. Ges. Basel. VIII. 1886, pp. 475, 480, pl. iv. fig. 5.

Carapace about four-fifths as long as broad, little convex, smooth to the naked eye, but with fine transverse subsquamiform pitting under the lens.

Frontal, orbital, and antero-lateral borders elegantly uniformly and conspicuously denticulate, and fringed (except the infra-orbital border) with long stiff silky hairs. Similar hairs fringe the legs, the arm and the inner angle of the wrist, and the anterior edge of the external maxillipeds.

Front cut into two broad lobes, each of which shows a very slight tendency to be divided into two lobules. Dorsal surface of roof of orbit without any marked grooves.

Chelipeds about as long as the carapace, the hand the most massive joint: the fingers are very short and stumpy, the dactylus closing very obliquely on a short straight immobile finger that is little better than a tubercle. On the outer surface of the hand is some fine subsquamiform sculpture: on the upper surface of the finger are some bluntly-dentiform granules in rows, and there are some granules near the inner angle of the wrist.

Legs stoutish, slightly shorter and much less massive than the chelipeds: the dorsad surfaces of the propodites and dactyli—as of the carpopodites also in their distal end—are abundantly and elegantly denticulate. All the dactyli are blade-like.

In the Indian Museum are two specimens from the Andamans.

2. *Kraussia nitida*, Stimpson.

Kraussia nitida, Stimpson. Proc. Ac. Nat. Sci. Philad. 1858, p. 40: Miers, Zool. H. M. S. Alert, pp. 184, 235: J. R. Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 379, pl. xxxviii. fig. 9.

Differs from *K. integra* in the following particulars:—

(1) The length of the carapace is more than four-fifths the breadth, and the carapace is more convex from side to side:

(2) The frontal, orbital, and antero-lateral borders are minutely, instead of conspicuously, denticulate, and the hairs that fringe them are more scanty:

(3) The front is more prominent and is cut into 2 lobes each of which is deeply cut into 2 lobules:

(4) There are two distinct though fine grooves in the roof of the orbit, one of which passes far back on to the carapace and imitates a cervical groove:

(5) The chelipeds are quite smooth except for a few granules at the inner angle of the wrist:

(6) The dactyli of the legs are more broadly blade-like, and the last three joints of the legs are without any denticulations or have only a trace of them on the propodite.

In the Indian Museum are two specimens one from the Andamans, 20 fms., the other from off the Ganjam coast, 9 fms.

Subfamily ATELECYCLINÆ.

Trichopeltarium, A. M. Edw.

Trichopeltarium, A. Milne Edwards, Bull. Mus. Comp. Zool. VIII. 1880, p. 19.

Carapace oval or subcircular, as long as or longer than broad, strongly convex, its borders spinate.

Front prominent, not very broad, cut into 3 sharp teeth or spines.

Orbits shallow, defined by spines with considerable gaps between them: inner suborbital angle spiniform. Eye-stalks slender.

The antennules fold longitudinally. The basal antenna-joint is short and subcylindrical; the flagellum coarse, stout, setaceous.

Epistome of fair length, fairly well defined, sunken, and overlapped by the external maxillipeds. Buccal orifice square-cut, longer than broad, not completely covered by the external maxillipeds, which are somewhat elongate and have the merus a little narrower than the ischium. Efferent branchial regions defined by ridges which do not reach up to the epistome.

Chelipeds massive and unequal in the male.

Legs stout, hairy, more or less spiny, ending in stout styliform dactyli: they are longer and are not much less massive than the female chelipeds.

3. *? Trichopeltarium ovale*, Anderson.

? Trichopeltarium ovale, Anderson, J.A.S.B. Vol. LXV. pt. 2. 1896, p. 103; Ill. Zool. Investigator, Crust. pl. xxv. figs. 4-4*a*: Alcock, Investigator Deep Sea Brachyura, p. 57.

Carapace egg-shaped, covered with spines which on its dorsal surface are bifid or multifid, and with short stiff but not very conspicuous hairs. The regions are well defined by coarse grooves: the gastric is divided into three sub-regions, and the cardiac into two, and on either side of the cardiac region a semilunar area is marked off on the branchial region.

The front, which is cut into three prongs, is about one-seventh the greatest breadth of the carapace, and is separated from the orbit by a deep notch.

The orbits are very incomplete: they are formed by a prominent

preocular tooth (parallel with, but less prominent than, the front), below which at the inner suborbital angle is an almost equally prominent coarse spine: there are also two other teeth—one at the external orbital angle, and the other between this and the preocular tooth—hardly distinguishable from the ordinary spines of the carapace. The eyestalks which are slender, tapering, and of good length, do not nearly fill the shallow orbital cavity.

The antennules fold longitudinally in fossæ, beneath the front: their basal joint is large. The antennæ arise almost in the same transverse line with the antennules: their basal joint forms a large part of the floor of the orbit.

The epistome is sunk below (*i.e.* is really arched much above) the plane of the external maxillipeds. The efferent branchial channels are defined by an incomplete ridge, and are patulous. The external maxillipeds are slender, and leave the mandibles exposed between them: the merus is obovate and narrower than the ischuim, the palp is coarse.

The chelipeds and legs are spiny and bristly, the spines in the case of the legs being well pronounced only on the dorsal surface of the meropodites.

In the female the chelipeds are shorter and not much stouter than the legs and are about as long as the carapace.

The legs are little unequal in length, the first pair which are slightly the longest being hardly half as long again as the carapace: they all end in long, stout, cylindrical, sharply styliform dactyli.

The abdomen of the female is seven-jointed and covered with coarse hairs: the first two segments are broader, and on them the spines decrease in size to the seventh segment which is smooth.

The colour in life is recorded by Dr. A. R. Anderson as pale bluish yellow.

Length of carapace and rostrum 64 millim., breadth 55·5 millim., depth 35 millim.

A single female from off the west coast of Ceylon 180–217 fms., on a foul bottom of broken coral.

Trachycarcinus, Faxon.

Trachycarcinus, Faxon, Bull. Mus. Comp. Zool. XXIV. 1893, p. 156, and Mem. Mus. Comp. Zool. XVIII. 1895, p. 25: Alcock, Investigator Deep Sea Brachyura, p. 58.

"Carapace pentagonal, moderately convex, lateral margins long, nearly straight, toothed. Front narrow, produced, three-toothed. Orbits large with forward aspect, imperfect, with two hiatuses above

one below, and one at the inner angle; lower wall formed chiefly by the carapace. Anterior margin of buccal cavity not distinctly defined, epistome short, ridges of the endostome developed. Sternum long and rather narrow. Abdomen of male narrow and five-jointed, the third, fourth, and fifth segments consolidated. Eye-stalks very small, retractile within the orbits. Antennules longitudinally folded. The antennæ lie in the inner hiatus of the orbit; their basal segment is but slightly enlarged, not filling the hiatus at the inner angle of the orbit nor attaining to the front, subcylindrical, unarmed, imperfectly fused with the carapace; the second segment is longer and slenderer than the first, the third segment about equal to the second in length, but slenderer; all these segments are furnished with long and coarse setæ; the whole antenna is less than one-half as long as the carapace. The ischium of the outer maxillipeds is produced at its antero-internal angle; the merus of the same appendages is rounded at the antero-external angle, obliquely truncated but not emarginated at the antero-internal angle, where it articulates with the following segment. Legs of moderate length. Right and left chelipeds very unequally developed in the male. Dactyli of ambulatory legs styliform, straight slender, longer than the penultimate segments."

4. *Trachycarcinus glaucus*, Alcock and Anderson,

Trachycarcinus glaucus, Alcock and Anderson, Ann. Mag. Nat. Hist. Jan. 1899, p. 8: Alcock, Investigator Deep Sea Brachyura, p. 59, pl. ii. fig. 2.

Carapace irregularly pentagonal, its surface coated with short stiff club-shaped hairs; the regions well defined, rather tumid, much subdivided into tumid lobules, of which the convexities are capped by clusters of large conical granules and the general surface also is studded especially in the young with similar granules.

Front narrow, horizontal, prominent, deeply cleft into three prongs of nearly equal size.

Antero-lateral borders half as long again as the postero-lateral, armed with three stout pinnulate spines not including the outer orbital angle: postero-lateral borders entire, posterior border finely beaded.

Upper orbital wall deeply cleft into three pinnulate teeth, lower orbital border deeply concave, its inner angle strongly spiniform. Eye-stalks slender, rather long: the eyes, which are more ventral than terminal, are dull and faintly pigmented (as in many species of *Munidopsis*), and are non-facetted.

Antennal flagella short, extremely slender, not hairy.

Chelipeds remarkably unequal in the male, equal in the female.

The smaller cheliped of the male and both chelipeds of the female

are about as long as the carapace, and are coated, almost to the finger-tips, with stiff club-shaped hairs, which are short except along the upper border of the wrist and hand and of the basal part of the finger, where they are long: beneath the hairs are some scattered granules, and along the upper border of the arm, wrist and hand are some denticles: the inner angle of the wrist is strongly spiniform, and the far end of the upper border of the hand is dentiform.

The larger cheliped of the male is about twice the length of the carapace, about half its length being formed by the hand and fingers: the greatest breadth of the hand is about half the length of the carapace. It is almost smooth, the upper border of the arm and hand, and the inner border and upper and outer surfaces of the wrist, alone being furnished with denticles and hairs: the inner angle of the wrist is spiniform.

The legs are covered with short stiff club-shaped hairs which are rather more thick-set on the anterior borders and on the dactyli than elsewhere. The second and third pair, which are rather longer than the first and last pair are somewhat less than $1\frac{3}{4}$ times the length of the carapace. All the dactyli end in a little claw.

The abdomen of the male consists of seven distinct segments, but the 3rd, 4th and 5th move together.

In life the animal is covered with a coat of mud held together by the hairs above described, the only bare parts being the hand and fingers and part of the arm of the larger cheliped of the male.

The colours in life are described by Dr. A. R. Anderson, as "white with a bluish tinge, eyes with a slight reddish opalescence." In spirit the bluish tinge is fainter, the eyes are a pale milky yellow-ochre, and the large hand is ivory-white.

The dimensions of the largest male are as follows:—

Length of carapace	18·5 millim.
Breadth of carapace	14·5 „
Combined length of hand and fingers, along lower border...	14·75 „
Combined length of basal joints, arm and wrist, along upper border	15 „

Fifteen specimens were dredged off the Travancore coast at a depth of 430 fms. The bottom consisted chiefly of coral (living and dead).

Several of the specimens were egg-laden females. The eggs are comparatively few in number and are large, their diameter being about 1·3 millim.

This species is very like *Trachycarcinus corallinus*, Faxon, which was dredged by the "Albatross" off Panama and the Pacific coast of Mexico, at depths of 546–695 fathoms.

It differs from that species in the following particulars :—

The carapace is more granular, and its lobules are capped by blunt conical spinules, *not* smooth tubercles; and its posterior border is finely and irregularly beaded, *not* dentate.

The front is deeply cut into 3 spines or prongs of almost equal size, *not* into 3 teeth of which the middle one is larger than the others.

The eyes, though very pale, are distinctly pigmented, *not* devoid of pigment.

The inner angle of the wrist of the smaller cheliped is very strongly spiniform, *not* unarmed.

As Mr. Faxon says, *Trachycarcinus* is very closely related to *Trichopeltarium*; in fact, the relation is so close as to make the separation of the two forms almost doubtful.

Family CORYSTIDÆ.

Corystiens (part) Milne Edwards, Hist. Nat. Crust. II. 139.
Corystoidea-Corystidæ (part) Dana, U. S. Expl. Exp. Crust. pt. I, p. 296.
Corystoidea (part) Miers, Challenger Brachyura, p. 210.
Majoidea-Corystoidea, Ortmann, Zool. Jahrb., Syst., VII. 1893, pp. 26, 28.
Oxyrhyncha-Corystidæ, Ortmann, in Bronn's Thier Reich. V. ii. (Arthropoda), p. 1166.

Carapace much longer than broad, oval, convex from side to side, the regions sometimes fairly well defined, sometimes not, never areolated.

Front fairly prominent, cut into 2 or 3 teeth.

The antennules are small and fold longitudinally.

The antennæ, when present and perfect, usually have the flagellum long coarse and setaceous.

There is no epistome, and the external maxillipeds, which are elongate and sometimes have a slight pediform cast, extend almost up to the antennules. The buccal orifice is elongate and is square cut with the anterior angles rounded and slightly convergent.

Legs either all gressorial or the last pair modified for swimming.

The following genera compose this family :—

I. *Genera in which the legs are not natatory :—*

1. *Bellia*, Milne Edwards, Ann. Sci. Nat. (3) IX. 1848, p. 192.
2. **Corystes*, Latr., Milne Edwards, Hist. Nat. Crust. II. 146.
3. *Corystoides*, Edwards and Lucas, Voy. Amer. Merid., Crust. p. 31.
4. *Gomeza*, Gray, Zool. Miscell. p. 39, Miers, Challenger Brachyura, p. 212 (=*Oeidia*, De Haan, Faun. Japon. Crust. p. 15).
5. *Podocatactes*, Ortmann, Zool. Jahrb., Syst., VII. 1893, p. 29.

II. *Genera in which the legs are more or less natatory* :—

6. * Nautilocorystes, Milne Edwards, Hist. Nat. Crust. II. 149 (=Dicera, De Haan, Faun. Japon. Crust. p. 14).
7. *Pseudocorystes*, Milne Edwards, Hist. Nat. Crust. II. 149.

Nautilocorystes, Edw.

Nautilocorystes, Milne Edwards, Hist. Nat. Crust. II. 149.
Dicera, De Haan, Faun. Japon. Crust. p. 14.

Carapace elongate-obovate, slightly convex from side to side, smooth without distinction of regions, the antero-lateral borders longer than the postero-lateral and armed with five teeth.

Front moderately broad, horizontal, moderately prominent, cut into 2 or 3 teeth.

The antennules fold longitudinally. Antennæ coarse, setaceous, the basal joint occupying the orbital hiatus, the flagellum about half as long as the carapace.

Buccal orifice elongate subquadrate, not defined anteriorly: external maxillipeds elongate, the merus narrower than the ischium and bearing the flagellum at its summit. Even in repose the external maxillipeds partly conceal the antennules.

Chelipeds short, much more massive than the legs.

Legs compressed, the first 3 pair end in a lanceolate dactylus the last pair end in a blade-like swimming dactylus.

1. *Nautilocorystes investigatoris*, n. sp.

Carapace elongate-obovate covered with a multitude of fine brown longitudinal lines, smooth.

Front about a third the greatest breadth of the carapace, slightly prominent beyond the orbits, cut into 3 teeth.

Antero-lateral borders cut into 5 irregularly disposed teeth including the outer orbital angle.

Inner angle of lower border of orbit acutely dentiform, prominent beyond the level of the front.

Chelipeds equal, about as long as the carapace: a spine at the inner angle of the wrist and two spines on the upper surface of the hand—one being in front of the apex of the wrist-joint the other behind the finger-joint.

Legs compressed, much slenderer but not much shorter than the chelipeds, hairy: the dactylus of the last pair is broadly blade-shaped as in *N. ocellatus*.

In the Indian Museum are 2 females—one with eggs—from the Vizagapatam coast 15–17 fms. The carapace is 6·25 millim. long and 5·5 millim. broad.

This species differs from *N. ocellatus* in the following particulars:—the front is 3-spined, the inner suborbital angle is extremely prominent and spiniform, there are two spines on the hand, and the colour-markings are fine longitudinal lines.

Under orders of the Council the following system of transliteration will be adopted for the future in all publications of the Society. Authors of papers for the *Journal*, Pt. I, are particularly requested to adhere to it in their contributions.

A. FOR THE DĒVANĀGARĪ ALPHABET, AND FOR ALL ALPHABETS RELATED TO IT.

अ *a*, आ *ā*, इ *i*, ई *ī*, उ *u*, ऊ *ū*, ऋ *ṛ*, ॠ *ṝ*, ऌ *ḷ*, ए *e*, ऐ *ai*,
ओ *o*, औ *au*, ं *ṁ*, ँ ˜ : *ḥ*

क *k*,	ख *kh*,	ग *g*,	घ *gh*,	ङ *ṅ*
च *c*,	छ *ch*,	ज *j*,	झ *jh*,	ञ *ñ*
ट *ṭ*,	ठ *ṭh*,	ड *ḍ*,	ढ *ḍh*,	ण *ṇ*
त *t*,	थ *th*,	द *d*,	ध *dh*,	न *n*
प *p*,	फ *ph*,	ब *b*,	भ *bh*,	म *m*
य *y*,	र *r*,	ल *l*,	व *v*,	(ळ *ḷ*)
श *ś*,	ष *ṣ*,	स *s*,	ह *h*.	

In the above the *virāma* has been omitted for the sake of clearness.

In Modern Vernaculars only; ड़ may be represented by *ṛ*, and ढ़ by *ṛh*.

Avagraha is to be represented by an apostrophe, thus सो ऽपि *sō 'pi*. *Visarga* is represented by *ḥ*, *Jihvāmūlīya* by *ḫ*, and *Upadhmānīya* by *ḭ*. *Anusvāra* is represented by *ṁ*, thus संसर्ग *saṁsarga*, and *anunāsika* by the sign ˜ over the letter nasalized, thus अँ *ã*, आँ *ā̃*, and so on. The *udātta* accent is represented by the sign ´ and the *svarita* by ˆ. Thus, अग्निः *agníḥ*, जनिता *janitā́*, क्व *kvá*, कन्या *kanyā́*. The *anudātta* accent may be represented by ˋ. Thus, ते अवर्धन्त *tḗ àvardhanta*.

B. FOR PERSIAN (INCLUDING ARABIC WORDS IN PERSIAN) AND HINDŪSTĀNĪ.

(The system is not applicable to Arabic when pronounced as in Arabic-speaking countries) :—

Vowels.	Consonants.	Sounds only found in Hindūstānī.
ا a	ب b	بھ bh
آ â	پ p	پھ ph
اِ i	ت t	تھ th
اِی ī		ٹ ṭ
اے ē		ٹھ ṭh
اُ u	ث s	
اُو ū	ج j	جھ jh
او ō	چ c	چھ ch

Vowels.		Consonants.		Sounds only found in Hindūstānī.	
اَیْ	ai	ح	ḥ		
اَوْ	au	خ	kh		
		د	d	ڈ	dh
				ڈ̄	ḍ
				ڈ̄ھ	ḍh
		ذ	z		
		ر	r	ڑ	ṛ
				ڑھ	ṛh
		ز	z		
		ژ	zh		
		س	s		
		ش	sh		
		ص	ṣ		
		ض	ẓ		
		ط	ṭ		
		ظ	ẓ		
		ع	‘		
		غ	gh		
		ف	f		
		ق	q		
		ک	k	کھ	kh
		گ	g	گھ	gh
		ل	l		
		م	m		
		ن	n		
		ں	when representing *anunāsika* in Dēva Nāgarī, by ˜ on the preceding vowel		
		و	w (or rarely v)		
		ھ	h		
		ی	y		
		Hamzah	’ (where necessary)		

The ل of the article ال in Arabic words should be assimilated before the solar letters; and the vowel *u* which often precedes the article and absorbs its vowel should remain attached to the word to which it belongs. Thus—اقبال الدولہ Iqbālu-d-daulah.

Tanwīn may be rendered by *n̲*—e. g., *ittifāqan̲*. *Alif-i maqṣūrah* should be rendered by *ā̤*.

Final ہ need not be written in Persian and Hindūstānī words, but should be written in Arabic words.

JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL

Part I—HISTORY, LITERATURE, &c.,

Extra-Number 1.—1899.

A Collection of Antiquities from Central Asia. Part I.[1] — *By* A. R. Rudolf Hoernle, C.I.E., Ph.D. (Tübingen).

(With 19 Plates and a Map.)

INTRODUCTION.

On two portions of this collection I have already reported in this *Journal*, Vol. LXVI, for 1897, Part I, pp. 213 ff., and in the *Proceedings*, for April 1898, pp. 124 ff. In the following pages I propose to give an account of the entire collection; and it will, therefore, be necessary to briefly include the substance of those two previous papers. For the leisure, without which I should not have been able to write it, I am under great obligation to the Government of India who, with the concurrence of the Government of Bengal, placed me on special duty for the purpose of examining and reporting on the collection.

[1] This is my Report to the Government of India, published, by permission of that Government, as an Extra-Number of the Journal of the Asiatic Society of Bengal. [Part II. of this Report will be issued subsequently.—T. B.]

Origin of the Collection.

To begin with, I may briefly explain the circumstances which led to the formation of the collection. It was the discovery of the Bower and Weber Manuscripts which first drew my attention to Eastern Turkestan as a promising field for epigraphical exploration. My hopes regarding the archæological possibilities of that country were confirmed by what I heard about the success of the Russians, whose Political Agents were said to actively collect manuscripts and other antiquities for St. Petersburg. Accordingly on the 1st June, 1893, I wrote to Mr. (now Sir) Charles J. Lyall, who was then the Home Secretary of the Government of India, suggesting that the Government might send instructions to their Political Agents in different parts of Central Asia, to make enquiries and to secure such specimens as they may be able to obtain. My suggestion was heartily seconded by Sir Charles Lyall, and at his instance, (in his demi-official letter, dated the 14th June, 1893), the Foreign Secretary, Sir M. Durand, who also fully approved of the proposal, caused the necessary instructions to issue, on the 22nd August, 1893, to Lt.-Colonel D. W. R. Barr, Officiating Resident in Kashmir, and through him to the Political Officers in Gilghit, Chitral, Kashghar and Leh. Similar instructions were issued to the British Political Agents in Khorassan, and, I believe, in Meshed. In response to these instructions a large number of Central Asian antiquities has already been secured, forming a very respectable British Collection, to which additions are still being made. To me personally it is source of much satisfaction to have thus been the means of initiating the movement. It is in acknowledgment of this initiative, that all acquisitions are transmitted to me, under the orders of the Government of India, for examination and report, and their ultimate place of deposit, as recommended by me, is to be the British Museum in London. The full determination of the antiquities, especially of the manuscript portion of them, will require more time than I have at present at my disposal.

Scope of the present Report.

The present report, therefore, is only of a preliminary character, and must be limited to a detailed classification and description of the antiquities, illustrated by selected specimens and accompanied with such observations and conclusions as are obviously suggested by them. Much of the epigraphical portion of the collection, however, is clearly of the highest interest, whether from the palæographic and linguistic points of view, or as bearing upon the history of culture in Central Asia, and well deserves more elaborate treatment and more extended publication. For this purpose my approaching retirement from India, I hope, will afford me the needful leisure, as well as

the co-operation of fellow-labourers in the field of Central Asian research, and such assistance as the British Government has always been prepared to extend to endeavours for the advancement of knowledge.

Contributors to the collection.

Among the places above mentioned Kashghar and Leh, especially the former, are those which are most favourably situated for the object in view, the collection of antiquities from Eastern Turkestan. It is from the Officers stationed at these two places that nearly all the objects which at present form the collection have been obtained. Captain Stuart H. Godfrey, who was the British Joint-Commissioner in Leh, in 1893, when the instructions of the Foreign Department were issued, informs me (in a letter, dated the 26th September, 1897), that he already before that date, on his own initiative, commenced endeavouring to obtain Central Asian manuscripts. His endeavours, though then unsuccessful, bore much fruit later on, after he had left Leh, as may be seen from the following list of consignments. Mr. George Macartney, who is stationed in Kashghar, as Special Assistant for Chinese Affairs to the Resident in Kashmir, being in the most favourable position, has also been the most successful in his contributions to the collection. To both these officers great credit is due for the successful part they have taken in the formation of the collection. To Sir Adelbert C. Talbot, K.C.I.E., the British Resident in Kashmir, the collection is under special obligation for the hearty support given to it throughout, without which it would probably never have reached its present dimensions.

List of contributions.

The following is a list, in chronological order, of the contributions to the collection, received by me from time to time:—

(1) From Mr. G. Macartney, a collection of small fragments of manuscripts, found near Kuchar. It was received by me early in April 1895 from the Foreign Office, with their D. O. letter, dated the 28th March, 1895, and reported on in the Proceedings, As. Soc. Beng., for May 1895, and in the Journal, As. Soc. Beng., Vol. LXVI, for 1897, pp. 213–224.

(2) From Captain S. H. Godfrey (G. 1), a collection of fragments of manuscripts, received by me towards the end of November 1895, and called the "Godfrey Manuscripts." They are said to have been found near Kuchar. A preliminary report on them was submitted by me to the Government of India on the $\frac{1}{10}$th March, 1897, and a fuller report (with facsimiles) was published by me in the Journal

of the Asiatic Society of Bengal, Vol. LXVI, Part I, No. 4, for 1897 (pp. 225 ff.), advance-copies of which were transmitted to the Government of India on the 23rd August, 1897, and to the 11th International Congress of Orientalists in Paris in October 1897.

(3) From Mr. G. Macartney (M. 1), a collection of six sets of manuscripts, received by me in December, 1896, from the Foreign Office with their D. O. letter, dated the 14th December, 1896, and called by me the "Macartney Manuscripts." This collection was also dealt with by me, together with the Godfrey collection (No. 2), in the two Reports above referred to.

(4) From Mr. G. Macartney (M. 2), a collection of miscellaneous antiquities, found in the Takla Makan desert. This collection, distributed in four sets, consisting of a skull, a manuscript, pottery, bronze figures, coins, and sundry other objects, was received by me in August 1897, with a letter of the Revenue and Agricultural Department of the Government of India, No. 2283-27-1, dated the 16th August, 1897. A preliminary report on it was submitted by me to the Government of India on the 15th September, 1897.

(5) From Captain S. H. Godfrey (G. 2) a manuscript book, said to have been found in the Takla Makan, and received by me early in October, 1897.

(6) From Captain S. H. Godfrey (G. 3), a collection of manuscript leaves, in three sets, found in the Takla Makan, and received by me towards the end of October, 1897, with a letter of the Revenue and Agricultural Department of the Government of India, No. 3043-27-3, dated the 14th October, 1897.

(7) From Mr. G. Macartney (M. 3), a collection of miscellaneous antiquities, procured from Khotan and the Takla Makan, consisting of (*a*) thirteen books, (*b*) pottery, (*c*) coins, (*d*) sundry objects. Seven books and the antiques were purchased by Mr. Macartney in Khotan for Rs. 95; the remaining six books were purchased by him from Badruddin. The total cost was Rs. 150. The collection was received by me early in November, 1897, with a letter No. 3169-27-7, from the Revenue and Agricultural Department of the Government of India, dated the 26th October, 1897.

(8) From Captain S. H. Godfrey (G. 4), a collection of miscellaneous antiquities, consisting of coins, seals and one lead figure, obtained from a merchant Miyan Ghulām Rasūl at a cost of about Rs. 30. It was received by me about the 12th November, 1897, and reported on to the Government of India on the 20th of the same month.

(9) From Mr. G. Macartney (M. 4), a collection of miscellaneous antiquities, obtained from Khotan for Rs. 11-3, and consisting of (*a*) books and detached inscribed leaves, and (*b*) sundry other objects. This collection was received by me towards the end of November 1897, and is referred to in the letter, No. 3265–27–8, of the Revenue and Agricultural Department of the Government of India, dated the 3rd November 1897.

(10) From Sir Adelbert Talbot, K.C.I.E. (T. 1), a small collection of twenty-four coins and twelve detached manuscript leaves, and sundry other objects, obtained from Muḥammad Ghauz of Khotan, through the Wazir Wazarat of Leh, and received by me on the 3rd December, 1897, and referred to in the letter, No. 3480-11-8, of the Revenue and Agricultural Department of the Government of India, dated the 3rd December, 1897.

(11) From Mr. G. Macartney (M. 5), two books, from Khotan, purchased for Rs. 40, and received by me on the 27th December, 1897, with a letter, No. 3734-11-23, from the Revenue and Agricultural Department of the Government of India, dated the 27th December, 1897.

(12) From Captain S. H. Godfrey (G. 5), a miscellaneous collection found in the Takla Makan, consisting of (*a*) two books and four detached leaves of manuscript, (*b*) three mud figures, and (*c*) eleven coins. It was received by me on the 9th January, 1898, and reported on to the Government of India on the 11th of the same month.

(13) From Captain S. H. Godfrey (G. 6), a collection of pottery and three copper figures, found in the Takla Makan, and received by me on the 27th January, 1898.

(14) From Captain S. H. Godfrey (G. 7), a miscellaneous collection of antiquities, found in the Takla Makan, and consisting of (*a*) three books and six detached inscribed leaves, (*b*) coins, (*c*) seals, (*d*) pottery, (*e*) metal figures, and (*f*) sundry other objects. This collection was received by me on the 25th of February, 1897, with a letter, No.

621-1-7, from the Revenue and Agricultural Department of the Government of India, dated on the same day.

(15) From Mr. G. Macartney (M. 6), a collection of miscellaneous antiquities, consisting of (*a*) six books, (*b*) coins, (*c*) seals, (*d*) pottery, (*e*) metal figures, (*f*) two stone heads of Buddha, and (*g*) sundry other objects. Three of the books were purchased from Badruddīn for Rs. 40, the other four books and all antiques from the Rev. Högberg for Rs. 200: total cost Rs. 240. This collection was received by me in Simla, on the 16th June, 1898, with a letter, No. 1297-1-14, from the Revenue and Agricultural Department of the Government of India dated $\frac{\text{19th May}}{\text{16th June}}$, 1898.

(16) From Mr. G. Macartney (M. 7), a collection of nine books, found at Aq Talā Tūz, and purchased for Rs. 40. It was received by me on the 19th June, 1898, with a letter, No. 1645-1-21, from the Revenue and Agricultural Department of the Government of India, dated the 17th June, 1898.

(17) From Mr. G. Macartney (M. 8), a collection of eight books, found at Kiang Tūz and purchased for Rs. 40. It was received by me on the same day as the preceding consignment.

(18) From Captain S. H. Godfrey (G. 8), one book, purchased for Rs. 45. It was received by me on the 16th July, 1898, with a letter, No. 1884-1-29, of the Revenue and Agricultural Department of the Government of India, of the same date.

(19) From Captain S. H. Godfrey (G. 9), one book, purchased for Rs. 40. It was received by me on the 8th August, 1898, with a letter, No. 2097-1, of the Revenue and Agricultural Department of the Government of India, of the same date.

(20) From Mr. G. Macartney (M. 9), a collection of miscellaneous antiquities, from Khotan, purchased for Rs. 20, and consisting of (*a*) two books, (*b*) eight sheets of manuscripts in Brāhmī characters, (*c*) three sheets of Chinese manuscripts (two dated), (*d*) two painted figures in stucco (one Buddha), (*e*) a painted wooden board (Buddha), (*f*) two terracotta figures; (*g*) one metal figure, (*h*) a few coins, seals, and (*i*) other miscellaneous objects. This collection was received by me on the 11th October, 1898,

with a letter, No. 2776-1-41, of the Revenue and Agricultural Department of the Government of India, of the same date.

(21) From Captain S. H. Godfrey (G. 10), a collection of miscellaneous antiquities, from the Takla Makan, sent, from Leh, and consisting of (*a*) three blockprints, (*b*) a carved wooden box, (*c*) seven seals, (*d*) 54 coins, (*e*) 56 terra-cottas. This collection was received by me on the 29th November, 1898, with his D. O. letter, dated the 19th November, 1898.

In the subsequent part of this report the contributions above enumerated will be referred to by the bracketed indications "M. 1., G. 1," etc.

With regard to the contribution No. 12 (or G. 5), I should explain that of the objects constituting the collection the two books, also two leaves, one mud figure and three coins have been retained for the British collection. These were replaced by objects of a similar character taken from other portions of the British collection; and the whole, thus reconstituted, Captain Godfrey was permitted by the Government of India (see No. 159-1-4 of the Revenue and Agricultural Department, dated the 19th January, 1898), to give to Mr. Dauvergne for presentation to the "French Archæological Society." They are now, as I learn from a letter received by me from M. A. Barth, in the hands of M. E. Senart in Paris.

Gold coin from Khotan.

In addition to the antiquities, above enumerated, I may here mention one which I have also seen and examined, but which does not belong to the British collection, but is the private property of Captain Godfrey. It is a gold coin regarding the acquisition of which Captain Godfrey, in private letters, dated the 30th October and 25th November, 1897, informs me as follows: "I had heard that gold coins were occasionally found by native treasure-seekers in the Takla Makan. As such coins are not liable to oxidisation, it was fairly certain that any obtainable might be of considerable numismatic, if not historical, interest. I accordingly requested Munshi Aḥmad Dīn and other native gentlemen to make enquiries as to whether a specimen could be procured. Dr. Chiraghu-d-dīn, formerly Hospital Assistant at Kashghar, very kindly obtained one for me from a Muhammadan priest in Khotan who had himself purchased it, together with certain seals, from a treasure-seeker there. The coin was, it is stated, exhumed from the soil in the desert together with those seals. For the latter a very high price was asked, for which reason the doctor did not buy

them.[2] Little over the intrinsic value of the gold was, however, asked for the coin itself. The latter fact seemed to lend added interest to the scientific character of the find, since it was clear that if the coin had been a spurious one, manufactured for sale as an antiquity, a much higher price would have been demanded." According to Munshi Aḥmad Dīn, "two other gold coins, seemingly of a similar description, were presented by the Russian Consul-General at Kashghar to H. I. M. the Tsar." Captain Godfrey's gold coin is shown on Plate I, fig. 1. Being but imperfectly supplied with reference-books, I have not been able to fully identify it; but it appears to be a Byzantine coin, perhaps of the Emperor Constantinus V, Copronymous, who died in 795 A.D.

Localities and Circumstances of the Finds.

With the exception of the antiquities, composing the contribution G. 4, all the others were procured from Eastern (or Chinese) Turkestan. The antiquities G. 4 (coins and seals) come from Samarkand, Tashkand, and other places of Western Turkestan. The rest of the antiquities come from the neighbourhood of two places, Kuchar and Khotan, in Eastern Turkestan. Their find-spots are shown in red on the accompanying Map. The town of Kuchar lies to the North, and Khotan to the South of the Great Sandy Desert, which occupies nearly the whole of the space intervening between the Tian Shan Mountains in the North and Kuen Luen Range in the South. The southern portion of this great desert which lies immediately North of Khotan, bears the name of Takla Makan, and most of the find-places are situated within the limits of this portion of the sandy desert. In fact, there are only two places near Kuchar, from which, any antiquities in the British collection have been procured. These are a mound and a "tower" (*i.e.*, a stūpa), situated 1 mile and 16 miles respectively to the west of that town. In the stūpa the Bower and Weber Manuscripts were found. In the same place were also found some of the Macartney Manuscripts (*viz.*, M. 1, Set I *a* and *b*). The fragments, composing the Godfrey Manuscripts (G. 1), as well as some fragments, included in M. 3 and T. 1, are also said to have been found near Kuchar, but the exact place of their discovery is not known. As all these fragments are strikingly alike with respect to paper, writing and general appearance, it is probable that they were all found at the same time and in the same place. On this point the only information available is that given by Captain Godfrey (in a private letter to myself; see my Report in the Journal of the Asiatic Society

[2] Possibly the seals here mentioned are identical with the pieces of yellow crystal referred to in Mr. Macartney's Note quoted below (p. xxxii).

of Bengal, Vol. LXVI, pp. 225, 226), that he received his fragments (G. 1) in the autumn (September) of 1895, and that he was told that they were dug up "near some old buried city in the vicinity of Kuchar." This last statement would seem to show that they were not found on or near the old "tower" of the Bower Manuscript; for the latter locality was not the site of a sand-buried city. The fragmentary state of the manuscripts (specimens are shown on Plates ii–viii of my Report, above referred to) tends to prove that they were really the proceeds of indiscriminate digging on some ancient site, which was probably being explored with the hope of finding treasure. A good number of such fragments must have been carried off at that time by the diggers; for only a portion of them were given to Captain Godfrey in September, 1895. He received them through certain Afghan merchants trading to Yarkand. Another (very small) portion was included (so far as I can now recollect) in the consignment M. 3, the items of which were purchased by Mr. Macartney "from some treasure-seekers" in Khotan when he visited that town in the spring of 1897. A third (also small) portion is included in the consignment T. 1, the items of which were purchased in October, 1897, by Sir Adelbert Talbot from a certain Muhammad Ghaus of Khotan through the Wazir Wazarat of Leh. The manner in which the treasure-seekers treated their find clearly illustrates their policy, of which more examples will be found further on. It is to divide their spoils into small portions which they dispose of to different purchasers at different times. On the whole I am rather disposed to believe that all these fragments (G. 1, M. 3 and T. 1) really come from the neighbourhood of Khotan, and were dug out (probably in the summer of 1895) from some sand-buried place in the Takla Makan. I suspect that in the statement made to Captain Godfrey about the "old buried city in the vicinity of Kuchar," there is some mistake, and that Khotan is really meant instead of Kuchar. There is, however, a third collection, also of fragments, which was really found near the latter town. They are the first consignment on my list, above given, and were dug out (apparently in September or October 1894) from a large mound, a little more than one mile west of Kuchar, by the orders of the Chinese Amban of that place. See my Report on these Fragments, printed in the Journal of the Asiatic Society of Bengal, Vol. LXVI, pp. 213, 214. According to the Amban's account, that mound had already been dug into "several years" previously, and on that occasion "some" manuscripts had been found of which no further information could be obtained. It is quite possible that some of the G. 1, M. 3 and T. 1 fragments, which in point of paper and script resemble the Weber MSS., may have come out of that find.

Discovery of the Macartney MSS.

The Macartney MSS., as already stated, were dug out, together with the Bower and Weber MSS., from an ancient Buddhist stūpa situated sixteen miles west of Kuchar, on some barren rocky hills, close to the left bank of the river Shahyar. These manuscripts have had a curious history of which I may give a brief account. It is mainly based on a Note by Munshī Aḥmad Dīn, kindly procured for me by Captain S. H. Godfrey. In a few particulars it corrects the accounts previously published by me in the Journal of the Asiatic Society of Bengal, Vol. LXVI, pp. 238–240, and in the Proceedings for 1898, pp. 63, 64. It appears that some time in 1889 some people of Kuchar undertook to make an excavation in the stūpa in question. Their object in digging into the stūpa was to find treasure, as it was well known that in the time of Yaqūb Beg much gold had been discovered in such ancient buildings. Whether or not they found any "treasure," is not known, but what they did find was a large number of manuscripts and detached papers together with the bodies of a cow and two foxes standing. The hole which they made into the stūpa was excavated straight in, level with the ground, and the manuscripts, accordingly, would seem to have been found, in the centre of the stūpa on the ground level, exactly in the spot, where the original deposit of relics is usually met with in such monuments. The manuscript books and papers were taken to the house of the chief Qāẓī of the town, where a couple of days afterwards they were seen by Ḥājī Ghulām Qādir, heaped up in a corner, there being "a big *sabad*, or 'basket,' full of them. On enquiry having been told the whole story by the Qāẓī, he brought away a few of them, and later on, early in 1890, he gave one of them, now known as the Bower Manuscript, to Major (then Lieut.) Bower.[3] The others he sent to his younger brother Dildār Khān in Yarkand. These the latter took with him to Leh in 1891. Here he gave one portion of it to Munshī Aḥmad Dīn, who in his turn presented his acquisition to Mr. Weber, a Moravian Missionary. The latter transmitted it to me in Calcutta, where, under the name of the Weber Manuscripts, specimens of it were published by me in the Journal of the Asiatic Society of Bengal (Volume LXII, for 1893). The remaining portion, Dildār Khān took with him to India, where he left it with a friend of his at Aligaṛh, a certain Faiz Muḥammad Khān. On a subsequent visit to India in 1895, he re-took it from his friend, brought it back to Turkestan, and

[3] Major Bower calls him a "Turki" merchant; but he is only such by reason of having married a Turkī woman, and having been settled in Kuchar for nearly 30 years. Originally he is an Afghan from Ghaznī, and elder brother of Dildār Khān.

presented it to Mr. Macartney. The latter forwarded it in 1896 to the Foreign Office in Simla, whence it was transmitted to me, in Calcutta. It was named by me the Macartney MSS. and specimens of it were published by me in the Journal of the Asiatic Society of Bengal (Volume LXVI, for 1897). What became of the rest of the manuscripts in the Qāẓī's house is not exactly known. It is probable that Andijani merchants in Kuchar, who are Russian subjects, must have got hold of some of them and transmitted them to Mr. Petrovsky, the Russian Consul-General in Kashghar. The latter forwarded them to St. Petersburg, where specimens of them were published in 1892 by Dr. S. von Oldenburg in the Journal of the Imperial Russian Archæological Society, Vol. VIII. As late as 1894, "ten manuscripts" were reported by Dildār Khān, on the information of his brother in Kuchar, to be in the possession of a certain Yūsuf Beg. Unfortunately the negotiations, set on foot by Mr. Marcartney for the purchase of these manuscripts, fell through, owing to the Beg's denial of possession, from fear of the Chinese authorities.* It is believed that subsequently Mr. Petrovsky succeeded in purchasing them. If this is correct, they should now be in St. Petersburg. The exact details of the find are so curious that it may be best to quote Dildār Khān's account, kindly procured for me by Mr. Macartney in January 1898. I translate from the original Urdū: "I heard from my brother Ghulām Qādir Khān that there was a dome-like tower near Kuchar at the foot of a mountain. Some people said that there was a treasure in it; it must be searched out. Accordingly some people making a hole in the tower, began to excavate it, when they found inside a spacious room (*ghar khānadār*), and in it a cow and two foxes standing. On touching them with the hand, the cow and foxes fell to the ground as if they were dust. In that place those two books were found packed in wooden boards. Also there is in that place a wall made as if of stone (*dīwār sang-ke mūāfiq*), and upon it something is written in characters not known. It is said that a few years ago an English gentleman (that is, Major Bower) went there, and having visited the place came away. Nothing more is known." With regard to the cow and the foxes mentioned in the above-account Mr. Macartney remarks in his covering letter: "As far as I can make out, they must have been found in the tower in a mummified condition. The art of stuffing animals would not appear to have been unknown in ancient times. M. Petrovski, the Russian Consul in Kashghar, informs me of having,

* This appears to be the incident, referred to in the Chinese Amban's letter, published by me in the *Journal, Asiatic Society of Bengal*, Vol. LXVII (for 1897), p. 213. The owner of the MSS. is there called Timūr Beg.

some years ago, received from Kuchar a fish contained in a box, found buried in the ground." Dildār Khān's remark about the inscribed stone-wall (a stone slab let into the wall?) is curious. It is, as I learn from Munshī Aḥmad Dīn, based on a statement by Qādir Ḥakim Beg of Kuchar, who, passing through Yarkand in 1895 on a pilgrimage to Mecca, was questioned on the subject of the discovery of the manuscripts. He was requested at the time by Mr. Macartney to procure a copy of the inscription; but owing to his death in Mecca, nothing more was heard of the slab. The truth of the report is well worth further enquiry: if true, the inscription might prove to be a most valuable record. At the same time, considering that the "room" must have been in almost complete darkness and that the explorers probably had no means of lighting it, it is not quite easy to understand, how, with the exception of the manuscripts which they brought away with them, they could identify the exact nature of what they found inside. I may note, however, that also in the stūpas of Afghanistan occasionally similar curious deposits have been found. Thus Masson relates (in the *Ariana Antiqua*, p. 110) that in "Tope No. 11 of Hidda" there were found in "an interior cupola" "some human bones and two or three animal teeth," which were afterwards identified as those "of the ass, the goat and a species of deer." Also with reference to the "spacious room" I may note that similar large chambers, in the form of "cupolas" or cubical "apartments" have been found in many of the "Topes and Tumuli" of Afghanistan. Thus, in "Tope No. 2 of Kotpur there was discovered a large cupola with a diameter of 12 feet."[5] In Buner, Dr. Stein found in the Takhtaband stūpa a cubical chamber, of 7 feet dimensions, which was lined with large and carefully cut slabs." This may illustrate the presence of an inscribed slab in the Kuchar stūpa.

Ancient sites near Khotan.

Most of the antiquities, including all the pottery, coins and other miscellaneous objects, as well as many manuscripts and all block-print books, have come from Khotan, from various sand-buried sites in the Takla Makan desert. Fifteen of these sites, situated at various distances, from 5 to 150 miles distant from Khotan, are now known, though, only two of them, Borazān and Aq Safil, have been verified by European visitors. For the remainder we have only the information given by native treasure-seekers, principal among whom appears to be a certain Islām Ākhūn of Khotan. These fifteen sites are:—

(1) Borazān (بورزان). This place was visited by Messrs. Högberg and Bäcklund, Swedish Missionaries in Kashghar, in 1897. It was

[5] See *Ariana Antiqua*, pp. 65, 69 *et passim*.

also visited by Mr. Macartney in the spring of the same year. In his demi-official letter, No. 121, dated 21st July, 1897, he states that "It is a largely populated village about 5 miles west of the Khotan Chinese city. Some gold ornaments, beads, precious stones (diamonds and *hakik*) and terracotta images have been discovered there." In a private letter, dated the 20th October, 1897, Mr. Macartney informs me that when he visited Borazān, he "found a number of villagers engaged in digging into the side of a loess cliff, the lower portion of which visibly contained a large quantity of broken pottery, bones and decomposed vegetable matter. The stratum in which the excavations were being made was about 12 feet below the level of the present village. The layer which lies immediately above this formation, and on which stands the village, is also of loess; but it is noteworthy that this upper layer shows no streaks or stratification, a fact which points to the conclusion that the deposit was formed during one single flood. Geologically speaking, therefore, there appears nothing furnishing an indication of the time during which the lower stratum had been covered. I enquired of the villagers whether there was any tradition about Borazān having once been destroyed by flood; but no information could be elicited on this point. They knew nothing about it." Mr. Bäcklund, however, informs me, in a letter, dated the 10th October, 1898, that "Borazān is said to have been a large town with forty gates, which was conquered by a Rustam who burnt it and led a rivulet into the place. These things are said to have taken place before the Moslim time." He adds that "the town in the place seen by me is now buried under the mud up to 25–30 feet, as it seemed to me. It is a find-place for clay images. We also found there a bone, measuring 16·75″ in circumference. Whether it be a bone from a yak or an elephant, we could not judge." Most of the pottery, coins and other miscellaneous objects, comprised in M. 2 and M. 3, are believed by Mr. Macartney to come from Borazān, while the similar objects, comprised in M. 6, are stated by Mr. Högberg, from whom they were acquired, to have been dug out in that place. It appears to me most probable that Borazān marks the ancient site of the town of Khotan. At the present day Khotan lies close to the left bank of the Yūrung Qāsh (or 'white jade') river, and apparently about 8 or 10 miles to the east of the Qarā Qāsh (or 'black jade') river. In olden times, however, it seems to have occupied a site nearly midway between those two rivers. According to the Geography of the Ming dynasty (from 1368 A.D.) the Yūrung Qāsh flowed 30 *li*, or 6 miles East of Khotan, and the Qarā Qāsh, 27 *li* or $5\frac{1}{2}$ miles West of that town.[6] According to other Chinese estimates

[6] See Abel Remusat's *Histoire de la Ville de Khotan*, p. 112; also p. 19.

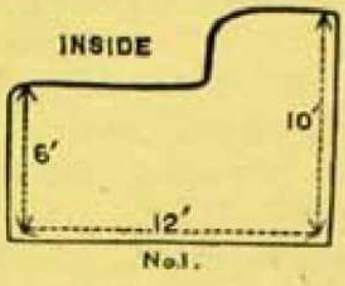
the distance from the Yūrung Qāsh to Khotan was only 20 *li* or 4 miles.[7] Anyhow, in those days Khotan appears to have stood on a site lying about 4–6 miles West of its present one, and therefore coincident with the site of Borazān, which is said to be "about 5 miles west of Khotan."

(2) Aq Sapīl or Aq Safīl (اق سفيل "white battlements"), an uninhabited place in the desert, was visited by Messrs. Högberg and Bäcklund in the summer of 1897. It lies about 20 miles north-east of Khotan. From this place was procured in the summer of 1896 a number of coins and miscellaneous objects of metal and glass, comprised in M. 2, Set II, as well as the manuscripts, comprising M. 1, Set II. A description of these manuscripts, together with facsimile specimens, has been published by me in the Journal of the Asiatic Society of Bengal, vol. LXVI, pp. 237 and 251, 252. The coins include some of the curious ancient bilingual (Chinese and Kharōṣṭhī) ones, which are referred to by me in my Presidential Address in the Proceedings of the Asiatic Society of Bengal, for 1898, p. 69. As these are referable to the 1st and 2nd centuries A.D. (see below pp. 10–15), they indicate Aq Sapīl to be a very ancient site. Turkī and Chinese coins of the early middle ages were also found here. Among the miscellaneous objects are several old metal seals, a small metal figure of Buddha in meditation, and broken pieces of glass. The following notes, made by Mr. Macartney from Mr. Högberg's account of his visit, are of much interest: "Aq Sapīl is a town or rather the remains of a town in the Takla Makan desert. It is one day's journey north-east of Khotan, to be reached through the oasis of Hangni.[8] Before coming to Hangni village, the remains of an old city may be seen. On leaving Hangni, the traveller is at once in the midst of sand dunes which rise from 10 to 30 feet high. Between Hangni and Aq Sapīl, the sites of two other ancient cities may be seen, evidenced by the fragments of pottery and bones on the ground. At this portion of the route, Mr. Högberg picked up a few old seals and coins. As Aq Sapīl itself is reached, the remains of an irrigation canal are noticeable, which canal must have once carried water to the city and the surrounding country. It is from 8 to 10 feet broad and, in places not choked up by sand, rather deep. At Aq Sapīl the

[7] See *ibidem*, pp. 21, 30.

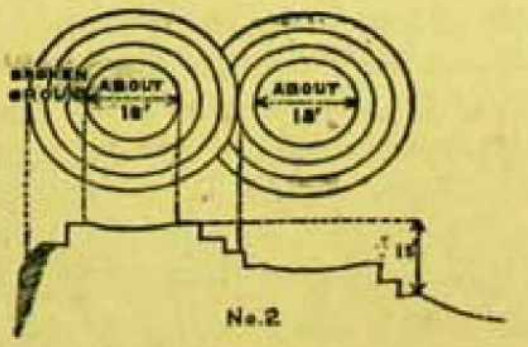
[8] The real approximate distance (about 20 miles) may be judged from the following account of his tour by Mr. Bäcklund. "Mr. Högberg and I started from Hangni at 5 o'clock in the morning, and arrived at Aq Sapīl at 10 or 11 o'clock, having marched slowly partly because we crossed places covered with pottery, and partly because of the soft high sand dunes. At Aq Sapīl we wandered about for a while, took some food, and returned to Hangni. Having taken some rest there, we started for Khotan, where we arrived a little before midnight, the same day, having then had rather a strong march."

remains of the city wall are still extant. The wall is from 10 to 12 feet high, and is made of square unburnt bricks (20 × 20 × 4 inches). On most of these bricks one of the following marks is to be found, ꭾ-ꞩ-ꞩ-ꞩ.[9] Other bricks, again, have on them the prints of the human foot. The section of the wall is shown in Woodcut No. 1.



No. 1.

Only about 25 feet of the wall can now be seen. About the middle of it there is an opening which must have been once occupied by a gate. The ground outside the wall is trough-shaped, and shows that Aq Sapīl was once surrounded by a ditch. Near the gate and on the further side of the ditch, the remains of two towers (stūpas ?) are visible. They are filled with sand inside, and made of earth on the outer side. Regarding the interior of the city the remarkable thing is that although no houses are left, yet the thoroughfares and the places where the houses had once been can be easily distinguished on whatever spot has not been overwhelmed by the sand.[10] The ground occupied by the streets is particularly hard owing to its having formerly been constantly trodden upon, and the same observation applies to the interior of the houses, but the comparatively soft soil on which the house walls stood has been scooped out and forms a hollow. This curious fact may possibly be attributed to the action of sandstorms which have had less corroding effect on the trodden ground than on the once wall-protected soil. The whole of the interior of the city, where it is not covered with sand, is overstrewn with fragments of pottery. The ground at one spot has the form of a couple of reversed amphitheatres, there being two elevated circular stands, slightly hollowed out like ponds, surrounded by terraces descending in widening circles. This is illustrated by Woodcut No. 2. Treasure-seekers would appear to have worked a great deal amongst the debris of Aq Sapīl as evidenced by the heaps of sifted earth, which may be seen here and there." The exact spot where the manuscripts M. 1, Set II were found by Islām Ākhūn is not known. It is only stated that "the MSS.



No. 2

[9] These letters might be Kharōṣṭhī, and might mean *da-di-dē-sa*.

[10] By way of illustration I may quote Dr. Bellew's description of the sand-buried "city of Nucta Rashid" about 36 miles south-east of Yangī Hiṣār: "It

were found wrapped up in a piece of woollen cloth and buried in about 3 feet of earth." To judge, however, from the circumstances in which manuscripts were found at Kök Gumbaz and at Qarā Yāntāq, it is not impossible that the manuscripts M. 1, Set II, were actually dug out from the hollow of one of the two mounds described by Mr. Högberg.

(3) Aq Talā Tūz.
(4) Qarā Qōl Mazār (Khōjam).
(5) Qarā Tāgh Āghāzī.
(6) Qarā Yāntāq.
(7) Kök Gumbaz

The position of these five places may be approximately determined from the following itinerary of Islām Ākhūn, which he gave to Mr. Macartney. He stated that on one of his search-expeditions he started from Guma which lies about 100 miles W. N. W. of Khotan. Leaving that town, "with two other men, about the beginning of January (apparently 1898) and travelling in a generally easterly direction, he came to Qarā Qöl (قره قول *lit.* 'black lake') where there is a salt water lake covered with reeds. Qarā Qöl is reached from Guma in one march (say 12 miles), the intervening ground being through cultivation. Qarā Qöl itself is not inhabited. A Mazār (or 'shrine') may however, be seen there. From Qarā Qöl, Islām Ākhūn went for about 20 miles in a south-easterly direction through the sands to Qarā Tāgh Aghāzī (قره تاغ اغازي or 'master of the black mountain'), a village surrounded by sand and having about 45 houses. Water had to be carried on a donkey from Qarā Tāgh Aghāzī. After three days' march (say 24 miles) in the desert, in a generally easterly direction, Kök Gumbaz was reached. After another march of about 8 miles going in the same direction, and over sandy ground covered with withered reeds, Islām Akhūn arrived at Qarā Yāntāq, where the remains of an ancient town were seen. The walls were no longer visible, but the place where they once stood was still distinguishable. These traces extended in all directions for a long way, and evidently Qarā Yāntāq had once been the site of a large town. The remains of an old canal of about two yards wide were also noticed. There is a tradition that Qarā Yāntāq was inhabited by Hindis (the name by which Buddhists are generally called in Chinese Turkestan), and that they were converted to Muhammadanism by one Mīrzā Aba Bakrī. A Tazkira of this person is in the hands of an Imām named Sādiq Ākhūn, now living at Qarā Tāgh Aghāzī. From Qarā Yāntāq, Islām Ākhūn went about 60 miles east over sand dunes, and came to

presents nothing to view but the outlines of the foundations of rampart walls and bastions, now mostly buried by the drifting sand. Here and there, where the sands have been swept away by the winds, the surface is strewed with fragments of pottery and glass." (*Report of a Mission to Yarkand in 1873*, p. 129).

Aq Talā Tūz, where a number of books were found. At Aq Talā Tūz (اق تله توز or 'white salt-hill') the remains of mud walls were extensively seen, whilst the ground was found to be strewn with pieces of old iron, fragments of pottery, and bits of wood. There was only one house which had the roof on, and that was half buried in the sand which was heaped up against it at one corner. As the door was not visible, a hole was made on one of the exposed sides. This done, Takhtāsh, one of Islām Ākhūn's companions, crept in, and found himself in a small room of about three yards square. This room was considerably filled with sand, so much so that it was impossible for a person to stand up in it without his head touching the ceiling. Takhtāsh found the books while digging in the sand. There were many other books, but these were in such a dilapidated condition that they crumbled to pieces on being handled. Islām Ākhūn was too frightened to inspect the interior of the house himself. At Aq Talā Tūz water was found by digging about a yard into the ground." This account, of course, must be taken *quantum valeat;* but there is nothing intrinsically improbable in the local descriptions, and the distances fairly agree with those given of the same places at other times. Whether the discoveries of books said to have been made in Aq Talā Tūz, were really made, is a quite different question. The description of this place and of Qarā Yāntāq fairly agrees with that given by Mr. Högberg of Aq Sapīl. The distance between Guma and Kök Gumbaz, by this itinerary which was related to Mr. Macartney in February, 1898, should be about 5 or 6 marches. The same distance was mentioned to Mr. Macartney in October, 1896, in connection with the find of M. 1, Set V, when Kök Gumbaz was "said to be 5 days' march east of Guma." (See my Report in the Journal, Asiatic Society Bengal, Vol. LXVI, p. 238.) At that time, M. 1, Set IV, is stated to have been found in Qarā Qöl Mazār Khōjam, which is said to be situated "in the desert at 50 miles east of Guma" (see *ibidem*, p. 238). There can hardly be a doubt that this place is identical with the Qarā Qöl of the itinerary, where a Mazār is stated to exist. There, however, it is, said to be only one day's march from Guma. I am disposed to believe that the earlier report contains a mistake; for 50 miles probably 5 miles should be read, which would be about one day's march.[11] The distance, by the itinerary, between Guma and Aq Talā Tūz is about 119 miles. Natives of Turkestan, as Mr. Bäcklund

11 Can this be identical with the "ancient city" which Dr. Sven Hedin visited from the village of Muji, at a distance of about 2½ miles north-east of the caravanserai (see p. 736 in his book *Through Asia*)? The ruins there are said to have "consisted principally of a number of tombs" (*mazār*).

informs me, are very untrustworthy in their estimates of distances. Allowing a discount of 25 per cent. for this uncertainty, and also for windings of the march, the distance measured on the map may be taken to be about 90 miles. This places Aq Talā Tūz not far to the west of the Qarā Qāsh river, at a distance of about 30 or 40 miles northwards of Khotan city. In favour of this determination it may be noted that the itinerary does not mention the passage of either the Qarā Qāsh or the Yūrung Qāsh rivers. As Islām Akhhun's expedition took place in January, both rivers would have been, at that season, in a very low state: still the total omission of the mention of the passage of either river, if it did take place, would be very strange. The probability, therefore, is that Aq Talā Tūz as well as all the other place mentioned in the itinerary are situated in that part of the Takla Makan desert, which lies to the west of the Qarā Qāsh river, and at a distance from 10 to 20 miles north of the caravan route from Guma to Khotan. At Aq Talā Tūz those nine block-prints are said to have been found which are comprised in M. 7. Of their discovery an exceptionally circumstantial account is given, which must be taken for what it may be worth. As a rule, the only information obtainable about the block-prints was that they were found near Khotan. The finders or the Khotanese merchants from whom they were obtained either could or would give no further information.

At Qarā Qöl Mazār (قره قول مزار خواجه or 'black lake shrine of my lord'), where there is said to be "an immense grave-yard in ruins, about 10 miles long" was found by Islām Ākhun, in August, 1895, the manuscript M. 1, Set. IV, described and figured by me in my Report in the Journal, As. Soc. Beng., Vol. LXVI, pp. 238 and 253, Plates xviii and xix. It was found simply lying on the sand, probably uncovered by the action of the wind which had blown away the superincumbent sand. When found, it is said to have been "bound between two little wooden boards" in the Indian fashion. These, having been broken on Islām Ākhūn's journey to Kashghar, where he sold the manuscript to Munshī Aḥmad Dīn for Mr. Macartney, were apparently thrown away by him. This is a pity, as in the present state of our knowledge of these Central Asian manuscripts every means of information is valuable.

At Kök Gumbaz (کوک گمبز or 'blue dome') were found by the same Islām Ākhūn, in October, 1895, the two manuscripts M. 1, Set. V and M. 1, Set. VI, also described and figured in the same Report, pp. 238 and 253, 254, Plate xx. The latter manuscript is said to have been simply "picked up from the ground" similarly to that (M. 1, Set. IV) found at Qarā Qöl Mazār; but the other manuscript

(M. 1, Set. V.) was found, enclosed in the remnants of "an iron box," in a hole situated apparently on the top of a circular platform. According to Islām Ākhūn's account, he "saw a circular wall of baked bricks three feet high, and at about 15 paces from it, there was another wall, in which a hole plastered over with mud was discovered: in removing this mud, the manuscript was found, contained in the remnant of what once was an iron box." This description reminds one of the similar erections described by Mr. Högberg as having been seen by him in Aq Sapīl. To judge from the latter description, which is much more circumstantial, it would seem that what Islām Ākhūn saw were two circular platforms about 3 feet high, the upper surfaces of which were hollowed out to hold relics.

At Kök Gumbaz were further found the manuscripts G. 3, Set III. and the objects comprised in M. 2, Set IV. Captain Godfrey, in a demi-official letter, No. 5208, dated the 15th September, 1897, and addressed to Sir Adelbert Talbot, Resident in Kashmir, gives the following account of the discovery of the manuscripts. They were "enclosed in what seem to be the rotten remnants of a cloth or cotton covering. This I have not attempted to open, since the whole should possibly be carefully steamed in order to prevent the brittle contents breaking up. This work would be best performed by trained hands. One point of interest in connection with it is the alleged fact that it was found along with another manuscript said to have been purchased by Mr. Macartney and transmitted to the Royal Geographical Society in London. They were both brought to Kashghar by a treasure-seeker (apparently Islām Ākhūn), from whom the majority of the manuscripts have been purchased by Mr. Macartney and Munshī Aḥmad Dīn. Both—the manuscript above alluded to and that now sent—were wrapped in different bags, and were stuck fast one upon another to a human skull. The site of the discovery was a place called Kök Gumbaz, five days' march from Khotan.[12] This place is seemingly an old graveyard. A small mound of earth was seen there in the middle of the surrounding sand. The treasure-seeker examined this. The dust crumbled away at the touch, and two feet underneath the surface he found the manuscripts and the skull referred to." On receipt of the bag, it was opened by me, and was found to contain two folded sheets, each inscribed on one side. The manuscript, mentioned by Captain Godfrey as having been transmitted to the Royal Geographical Society, is now deposited in the British Museum, as will be seen from the following extract from a

[12] In other accounts it is said to be five days' march east of Guma. Both may be correct, for it will be seen from the map, that Kök Gumbaz lies roughly midway between Guma and Khotan, east of the former and north-west of the latter town.

private letter to myself of Mr. Cecil Bendall, dated London, the 1st October, 1897: "I think it may interest you to know that Mr. Macartney sent us here two collections of fragments similar to some of those described by you at pp. 38 ff. (of Extra-copies, corresponding to pp. 250 ff. of my Report in the Journal, As. Soc. Beng., Vol. LXVI). We have (1) a "book," very similar to that described by you and figured in your Plate xx. The peg is wood, not metal, but it comes through in about the same part of the leaves, which are very dirty brown paper like yours. The "book" has blank leaves at both ends. The writing is mostly that figured in your Plate xv; but several leaves (apparently occurring at random) are writing in the script of your Plate xvii with those odd 'ligatures', some of which, I think, must be of Syriac (Nestorian) origin. (2) A few leaves, showing rulings in double lines and folded over. The writing here is certainly of Mongol origin." A comparison of these different accounts suggests that the "mound", in which the skull with its pillow of manuscripts was discovered, is an erection similar to those described by Mr. Högberg and Islām Ākhūn. The exact time when the discovery was made is no where stated. But it is probable that it was made in October, 1896. For with regard to the objects comprising M. 2, Set. IV, Mr. Macartney states that "these images and Chinese coins were found by Islām Ākhūn in October, 1896 along with manuscripts." Moreover from Kök Gumbaz, Islām Ākhūn appears to have gone on to Qarā Yāntāq where, in the November following, he dug out the skull with its MSS. pillow which I shall next describe.

At Qarā Yāntāq (قره يانتاق or 'black thorn') was found, by Islām Ākhūn in November, 1896, the skull with its MSS.-pillow just referred to. In the same place were found two small horsemen of bronze, some old coins and a large quantity of broken metal. The whole constitutes M. 2, Set I. The story of the discovery, from information given by the discoverer, is thus related by Mr. Macartney in his D. O. letter, No. 58, dated Kashghar, the 31st March, 1897 and addressed to the Resident in Kashmir. "The skull with the manuscript adhering to it was found by him in November, 1896, at Qarā Yāntāq, situated in the desert at about five days' journey east of Guma. The soil of Qarā Yāntāq is described to be of loess. Here and there are to be seen, along what must have been once the bed of a river,[18] some rushes still rooted in the ground, but withered and blackened by want of moisture and by exposure. At Qarā Yāntāq, there is one solitary mound, circular in shape, and about 5 feet in diameter and 2 feet in height. The skull with the manuscript adhering to it was discovered on this elevation, and was partially buried.

[18] This, as may be seen from the Map, should be the dry bed of the river which flows past Pialma, on the caravan route from Yarkand to Khotan.

The two images of horsemen were dug up from the interior of the mound. The other objects were picked up from the surrounding country." The whole of the find was transmitted to me by Mr. Macartney, especially the skull resting on its bag, exactly as it had been found. On opening the bag, it was found to contain a manuscript book, similar to those found at Kök Gumbaz and Qarā Qöl Mazār, but with its leaves cut in a very peculiar shape. The skull, on examination by Dr. Alcock, Superintendent of the Indian Museum in Calcutta, was found to be of the Mongolian type. The mound in which it and the horsemen were found is no doubt similar to those existing in Kök Gumbaz, Aq Sapīl and other places. The combination of the objects found in it would seem to indicate it to be the sepulchral monument of an ancient chieftain. This and the finding of old coins indicates Qarā Yāntāq to have been a very ancient settlement.

(8) Yābū Qūm (يابو قوم or 'load-ponies' sands')[14] is said to be situated 50 or 60 miles north-east of Khotan, and is the place where the manuscripts of M. 1, Set III, are said to have been found. These have been described and figured by me in the Journal of the Asiatic Society of Bengal, Vol. LXVI, pp. 238 and 253, Plate xvii. The exact time of their discovery is not known, but they were purchased from Islām Ākẖūn, the finder, in July 1896. Probably they were found in the autumn or winter of 1895, about the time when the finds at Qarā Qöl Mazār and Kök Gumbaz were made. Islām Ākẖūn stated that "at Yābū Qūm some ruins of a mud wall are still visible," and that "the manuscripts were found wrapped up in a piece of cloth and mixed up with human bones, the whole lying on some partially exposed boards of a wooden coffin." Putting this together with what we know of the circumstances of the finds at Aq Sapīl, Kök Gumbaz and Qarā Yāntāq, it may be concluded that the "mud wall" belonged to one of those circular mounds, and that the "human bones" may have been the fragments of a skull, which had rested on the wrapped-up manuscripts. As to the real nature of the boards of the so-called "wooden coffin," it is premature to make any conjecture. It appears to me probable that the manuscript sheet G. 3, Set I, was also found at Yābū Qūm. For that manuscript is said (in Captain Godfrey's demi-official letter, No. 5208, dated the 15th September 1897, and addressed to the Resident in Kashmir) to have been found "at a place 50 or 60 miles north-east of Khotan in the midst of the Takla Makan desert;" and Yābū Qūm is also said "to be situated at 50 or 60 miles north-east of Khotan in the midst of the Takla Makan desert" (see my

[14] Mr. Bäcklund suggests that the name marks a spot where a caravan was lost in the sands.

Report in the Journal of the Asiatic Society of Bengal). It may however, also have come from Dandān Uiliq, which, to judge from the bearings and distance given of it (as may be seen from the Map) cannot be very far distant from Yābū Qūm.

(9) KIANG TŪZ (perhaps incorrect for كان توز *Kān Tūz* or 'salt mine') is said to be a place situated about 150 miles east of Khotan, on the road to Charchan. Here the eight block-print books, comprised in M. 8, are said to have been found by Islām Ākhūn; but this information requires to be received *cum grano salis*.

(10) DANDĀN UILIQ.
(11) IMĀM APTAḤ MAZĀR.
(12) KHITĀI UILIQ.
(13) QOTĀZ LANGAR.
(14) SULṬĀN WAIS QIRĀN.
(15) TĀM AGHĪL.

None of these six places are specifically mentioned as spots where any of the objects comprised in the British Collection have been found, though some of the objects of which the exact find-place is not stated may have come from one or the other of them. All six are stated to be places which are frequented by treasure-seekers from Khotan. They are described by Mr. Macartney in a Note, attached to his demi-official letter, No. 121, dated Kashghar, the 21st July, 1897, as follows:

DANDĀN UILIQ (دندان اويلیق or 'Ivory House'), at about 6 days' journey north-east of Khotan; the remains of a Bazar, half-buried in sand, is said to be here, the stalls, which contain piece-goods, crumbling to dust at the touch, being still visible. The ruins of a Serāi, But-khāna (or 'idol-house') and a Mill can also be discerned. Being situated right in the desert, it is considered to be a difficult place to reach. There is no water on the way; but water may be found at the place itself by digging at the foot of a solitary tree which is still green. Discoveries: manuscripts, tea, weaving machines, coins, *hakik* and *lajwar* stones, and pearls.

IMĀM APTAḤ MAZĀR (امام افتح مزار or 'Shrine of Imām Aftaḥ or Aptaḥ, one of Khalif 'Omar's men), about 14 miles north-west of Khotan; inhabited. Discoveries: seals, money, and *hakik* stones.

KHITĀI UILIQ (ختابي اويلیق or 'Chinese House') said to be situated about 1½ march north of Khotan, near the Aksu road. It appears that the ruins of a few houses are extant here.

QOTĀZ LANGAR (قوتاز لنگر or 'resting place of yaks'); on the Khotan-Polu road, at about 1½ march from the Khotan city. The place is described as situated in the midst of sand-hills and inhabited by two families. Discoveries: manuscripts and gold coins.

SULṬĀN I WAIS I QIRĀN (سلطان ويس قران, perhaps the name of a Governor); one march north-east of Khotan. Discoveries: manuscripts, silver hooks, coins, and one wooden idol.

TĀM AGHĪL (تام اغيل or 'a walled enclosure for cattle'); half-march north-east of Khotan; inhabited; gold ornaments and seals are said to have been found in this village. A human skull, with a layer of gold and with a ring attached to the nose, appears to have been picked up here.

Summary.

For convenient reference the following Table gives a summary of all the antiquities, the localities and times when they were found or received, and the persons who found them or through whom they were received. By "MSS." are understood manuscript or xylograph books, or *pothī* bound in the Indian fashion; also detached leaves or sheets. By "books" are meant volumes, either manuscript or xylograph, which are bound in the European fashion. Dates, placed within brackets, are those of the receipt of the antiquities, their dates of discovery being unknown.

No.	Consignment.	Objects.	Find-place.	Time.	Finder or Transmitter.
1	Fragments.	MSS.	Kuchar.	Sept., 1894.	Through the Amban of Kuchar.
2	G. 1.	MSS.	Kuchar (Khotan?)	(Sept., 1895).	Through anonymous merchants.
3	M. 1, Set I.	MSS.	Kuchar.	1889.	Dildār Khān, Afghan, and another Turki merchant.
4	M. 1, Set II.	MSS.	Aq Sapīl (Khotan).	1895.	Islām Ākhūn, treasure-seeker of Khotan.
5	M. 1, Set III.	MSS.	Yābū Qūm (Khotan).	1895.	do.
6	M. 1, Set IV.	MSS.	Qarā Qōl Mazār (Khotan).	August, 1895.	do.
7	M. 1, Sets V, VI.	MSS.	Kök Gumbaz (Khotan).	October, 1895.	do.
8	M. 2, Set I.	MSS., Antiq.	Qarā Yāntāq (Khotan).	November, 1896.	do.
9	M. 2, Set II.	Antiques.	Aq Sapīl (do.)	1895-96.	do.
10	M. 2, Set III.	Antiques.	Borazān (Khotan).	(31st March, 1895).	Through Akram Khān and Badruddīn Khān, Afghan traders in Khotan.
11	M. 2, Set IV.	Antiques.	Kök Gumbaz (Khotan).	October, 1896.	Islām Ākhūn, treasure-seeker of Khotan.
12	G. 2.	Book.	Takla Makan.	(11th Sept., 1897).	do.
13	G. 3, Set I.	MSS.	Yābū Qūm (Khotan).	1895.	do.?
14	G. 3, Set II.	MSS.	Unknown.	Unknown.	Unknown.
15	G. 3, Set III.	MSS.	Kök Gumbaz (Khotan).	October, 1896.	Islām Ākhūn, treasure-seeker of Khotan.
16	M. 3.	MSS., 13 books, Antiquities.	Borazān (Khotan).	(31st July, 1897.)	Six books and some antiquities through Badruddīn; 7 books, MSS. and antiques. bought by Mr. Macartney in Khotan.

No.	Consignment.	Objects.	Find-place.	Time.	Finder or Transmitter.
17	G. 4.	Antiques.	Western Turkestan.	(20th Oct., 1897.)	Through Miyān Ghulām Rasūl, merchant.
18	M. 4.	MSS., books, Antiques.	Takla Makan.	(3rd Sept., 1897).	Brought to Mr. Macartney from Khotan.
19	T. 1.	MSS.	do.	1895.	Muḥammad Ghauz of Khotan through the Wazīr Wazarat of Leh.
20	M. 5.	Books (2).	do.	(6th Oct., 1897).	Brought to Mr. Macartney from Khotan.
21	G. 5.	Books (2), MSS.	do.	December, 1897.	Unknown.
22	G. 6.	Antiques.	do.	January, 1898.	Through Munshi Aḥmad Dīn.
23	G. 7.	Books (3).	do.	1st February, 1898.	Unknown.
24	M. 6.	Books (6), Antiques.	Khotan, Borazān.	Summer, 1897.	Two books through Badruddīn; rest from Rev. Högberg.
25	M. 7.	Books (9).	Aq Talā Tūz.	January, 1898.	Islām Ākhūn, treasure-seeker of Khotan.
26	M. 8.	Books (8).	Kiang Tūz.	(13th April, 1898).	do.
27	G. 8.	Book (1).	Unknown.	(7th July, 1898).	Through Muḥammad Bakhsh, a Panjābī trader in Kashghar.
28	G. 9.	Book (1).	do.	(25th July, 1898).	Through Sayyid Gul Muḥammad, Kashghar merchant.
29	M. 9.	MSS., books, Antiques.	Khotan.	(11th July, 1898).	Through Badruddīn.
30	G. 10.	Books, Antiques.	Takla Makan.	(November, 1898).	From Leh.

Description of the Takla Makan Tract.[15]

The Takla Makan desert appears to have received its name from the large quantities of broken pottery, which are found strewn about in many places,[16] and which show that, in ancient times, parts of

[15] Compare the account of this Tract in the *Report of a Mission to Yarkand in 1873*, pp. 25 ff.

[16] Mr. Bäcklund informs me that "Takla Makan is a peculiar word which the natives apply to places covered with pottery. Such places are very numerous. Also many skeletons can be found in those places." Mr. Macartney also writes to me that "the fragments of ancient pottery, images, etc., are not always found imbedded as at Borazān. They are often seen lying on the surface of the ground. I was much struck, along the road between Guma and Jhanguiā, with the frequent appearance of pieces of broken earthen-ware vases (of no artistic value) covering large areas of ground, such areas being themselves situated in the midst of a sand-desert, and often 5 or 6 miles from habitation." The word 'Takla Makan' is not as Dr. Sven Hedin appears to state (pp. 450, 457, 785, 801 in his most interesting book *Through Asia*) the proper name of any one particular place.

it must have been the seat of an advanced civilization. Among the peculiar features of the tract of country which comprises that desert and the adjoining belt of cultivation are the numerous rivers which come from the valleys of the Karakorum and Kuenluen Ranges, and traverse its surface to their final junction with the Tarim river. In the present day it is only the two largest of these rivers, the Yūrung Qāsh on which Khotan lies, and the Qarā Qāsh on which the homonymous town lies, which, uniting north of Khotan, reach that termination. The smaller rivers, some of which may have been tributaries of the two large ones, after emerging from the valleys, now soon lose themselves in the sandy desert. "These rivers large and small, are the seats of the fixed population and the entire productive industry of the country." "Numerous canals are drawn off from them to the lands on each side, and thus convert considerable tracts of what would be otherwise desert-waste into fertile and populous settlements." At present the extent of these settlements is very limited, but formerly—many centuries ago—they extended much further into the interior, probably some 30 to 50 miles beyond the present borders of the sandy desert. The climate of the country is notable for "the extreme dryness of its atmosphere at all times and the trifling amount of its rainfall." As a consequence "the soil everywhere is characterised by its aridity and barrenness, and is more or less highly charged with salines, which retain sufficient moisture to form, in the desert, mud bogs and marshes on which grow coarse reeds and dwarf tamarisks." In these circumstances it is only by careful irrigation that the area of cultivation can be preserved and the encroachments of the moving sands of the desert prevented. The appearance and action of these moving sands has thus been described by Dr. Bellew: "During the spring and summer months a north or north-west wind prevails, blowing with considerable force and persistence for many days consecutively. As it sweeps over the plain, it raises the impalpable dust on its surface, and obscures the air by a dense haze resembling in darkness a November fog in London; but it drives the heavier particles of sand before it, and on the subsidence of the wind, they are left on the plain in the form of ripples, like those on the sandy beach washed by an ebbing current." In course of time, there is formed "a perfect sea of loose sand, advancing in regular wave lines from north-west to south-east. The sand dunes are mostly from ten to twenty feet high, but some are seen like little hills, fully a hundred feet high, and in some spots higher. They cover the plain, of which the hard clay is seen between their rows, with numberless chains of two or three or more together in a line, and follow in successive rows,

one behind the other." When, during the earlier centuries of the Christian era, in consequence of the troubles attending the tribal migrations and the Muhammadan conquests, the population became reduced and irrigation fell into neglect, the advancing sands gradually overwhelmed one outlying settlement after the other, and narrowed the belt of settlement and cultivation to its present limits. Many traces of these ancient settlements and the water-courses on which they lay are still met with in the desert; and some of them have been named and described above (pp. xii ff.)[17] The recollection of the desert having been once a fertile and populous country still survives in that region. Mr. Macartney, in his demi-official letter, No. 121, dated the 21st July, 1897, reports that "it is believed by the natives of Kashgharia that the Takla Makan desert was once a fertile and cultivated country. There is a tradition that before the introduction of Muhammadanism [in the 10th and 11th centuries A. D.], forty-one cities[18] flourished in that region under the rule of a certain Zewar Shāh, king of Katak, and that by reason of the disbelief of the inhabitants in the religion of the Prophet, which three Imāms from Bukhāra had come to preach, their country was suddenly and miraculously destroyed by a sandstorm. This story is told at considerable length in the Taskirah of Kamaluddīn, Zahiruddīn and Khwaja Arush.[19] The natives believe that the antiques which are constantly found in the Takla Makan desert belonged to the cities which once formed part of the kingdom of Zewar Shāh." The exact site of the city of Katak, here mentioned, is not known, but it probably lay about three marches or 40 miles south-west of Lop Nor, on the great trade-route from China to Khotan, which ran by way of Chārchan.[20] Its destruction by the sands occurred about 1330 A.D., and it is prob-

[17] A most interesting account of some others which Dr. Sven Hedin discovered during his travels in the Takla Makan is given in his book *Through Asia.*

[18] On p. 496 of Dr. Sven Hedin's book *Through Asia*, another tradition concerning the former existence of "forty towns" is mentioned.

[19] This Taskirah had been transmitted to me in the box which contained the consignment M. 3. It has been returned to Mr. Macartney for the purpose of translation and eventual publication.

[20] This is the view advocated by the late N. Elias in his Translation of the Tārīkh-i-Rashīdī, pp. 11, 12, footnote. Dr. Sven Hedin discovered a place, called Katak, on the banks of the Khotan river (see p. 819 of his book *Through Asia*); but he also met with the name further east, near the Yarkand river (see *ibidem*, p. 473), and also further west, "a long way" south of the Achik (or old Tarim) river (see *ibid.*, p. 850). It would seem probable that *katak* should really be *köttek* or 'dead forest' (see *ibid.*, p. 811, 850), and that the name is *shahr-i-köttek* or 'town in the dead forest.' Like *Takla Makan* it is not the proper name of a particular place, but a general name common to a number of old sites.

ably on account of this comparatively modern date that we possess a detailed account of the catastrophe. It may be seen in Mīrza Muḥammad Ḥaidar's Tārīkh-i-Rashīdī (English Translation by N. Elias, p. 10 ff.,) written between 1541 and 1546 A.D. That writer thus describes the condition of the desert in his time (*ibidem*, p. 295): "To the east and south of Kashghar and Khotan are deserts which consist of nothing but heaps of shifting sands, impenetrable jungles, waste lands and salt-deserts. In ancient times there were large towns in these wastes, and the names of two of them have been preserved, namely Lob and Katak; but of the rest no name or trace remains: all are buried under the sand. Hunters who go there after wild animals, relate that sometimes the foundations of cities are visible, and that they have recognized noble buildings, such as castles, minarets, mosques and colleges, but that when they returned a short time afterwards, no trace of these was to be found; for the sand had again overwhelmed them." This fact of the recurrent disappearance and reappearance of sand-buried sites and ruins naturally follows from the action, above described, of the winds on the sands, and has also been noticed by modern travellers.[21] It also forms a welcome occasion for the visits of treasure-seekers, especially in Khotan, where, as Mr. Macartney informs us, they make a regular livelihood of that occupation, being in the habit of visiting, after a sandstorm or a flood, such localities as seem most promising, in the hope of picking up some objects in gold or silver which have been laid bare by the wind or water. As an example of such a visit the itinerary of Islām Khān has been given above.

As already stated the process of submergence of the ancient civilization of Eastern Turkestan under the advancing sands of the desert had already commenced long before the Muhammadan period. It was already in full operation at the time of the Chinese Buddhist pilgrim, Hiuen Tsiang, in the seventh century A.D., when Buddhism was still the prevailing religion and culture of Khotan and the rest of Eastern Turkestan. On his return from India to China, in the year 644 A.D., he took the southern route passing through Khotan and Pima to Chārchan: the northern route, by which he had travelled from China to India, passed through Kuchar and Kashghar. In those days Pima was a comparatively new settlement, lying on the outskirts of the Takla Makan desert, and it still existed for many centuries afterwards, for in 1274 A.D. Marco Polo saw it on his way to China. At the present day it has disappeared in the sands, and its exact site is not known. According to the data furnished by Hiuen Tsiang's itinerary, it must have

[21] See, *e.g.*, Dr. Bellew's observations on the subject in the *Report of a Mission to Yarkand in 1873*, pp. 28, 29, 37, 38.

lain about 100 miles East of Khotan, which would place it somewhere to the north or north-west, of the present town of Kiria. The latter would seem to have taken the place of Pima, when it was overwhelmed by the sand, just as, according to Hiuen Tsiang's account, Pima itself took the place of the still more ancient town of Ho-lo-lo-kia, which lay further north-west. Possibly Ho-lo-lo-kia may have occupied the site of the present Dandān Uiliq, which is said to lie 6 marches or about 80 miles north-east of Khotan. The description of that place, given above, would well enough suit a place such as Ho-lo-lo-kia might have been.

Conservation of Antiquities.

The physical conditions of the Takla Makan desert, with the extreme dryness of its atmosphere and the trifling amount of rainfall, above referred to, are very favourable to the conservation, for an indefinitely long period, of everything buried under its sands. This has been repeatedly observed by travellers; see, *e.g.*, the remarks of Dr. Bellew in the *Report of a Mission to Yarkand in 1873*, p 38, quoted by me in the Journal of the Asiatic Society of Bengal, Vol. LXVI, p. 256. It has been amply confirmed by Dr. Sven Hedin's discoveries in Qarā Dung and elsewhere. That explorer more than once, in his book *Through Asia*, remarks on the fact that "the dry fine sand of the desert unquestionably possesses the property of preserving organic matter for a very long time; see pp. 540, 802, 816 ff. There is, therefore, nothing intrinsically improbable in the claim of the manuscripts and xylographs, contained in the British Collection, to be of a very great antiquity.

Ancient graveyards and stūpas.

One of the places were antiques have been found, Qarā Qöl Mazār, near Guma, is described as "an immense graveyard in ruins, possibly ten miles long," and there is also a Mazār or Muhammadan shrine[22] there. It is possible that this place may be the site of one of those great Muhammadan defeats which took place at the end of the 11th and beginning of the 12th century A.D. At that time the fierce struggle for mastery took place between the Muhammadans of Kashghar and the Buddhists of Khotan, which finally established the Muhammadan Faith in Eastern Turkestan. Dr. Bellew, in the *Report of a Mission to Yarkand*, describes several "vast cemeteries" in the sandy desert marking the sites of the slaughter of Muhammadan warriors. One is at Ordām Pādshāh, about 30 miles east of Yangī Hiṣār, where there is a

[22] A *mazār* is a shrine and place of pilgrimage, consisting of the tomb of some holy person with a kind of mosque built near it.

shrine of 'Alī Arslān Khān and the graves of his 300 fellow martyrs. Another is about three miles south-west of that town at Chuchām Pādshāh where there is a "vast cemetery consecrated to the dust of 10,000 warrior martyrs."[28] Possibly Qarā Qöl Mazār may be a similar ancient Muhammadan cemetery; but all the available indications rather point to the sites of the finds being ancient Buddhist "graveyards." Kök Gumbaz, where the skull with the pillow of manuscripts was dug out, is said to be "seemingly an old graveyard." Qarā Yāntāq, clearly, is a similar place, where also a skull with a bag of manuscripts was dug out from the top of a circular mound. In Yābū Qūm, the manuscripts, M. 2, Set III, were found "mixed up with human bones, lying on some partially exposed boards of a wooden coffin." Mr. Högberg says with reference to the "books," purchased from him by Mr. Macartney and comprised in M. 6, that he believes "they were all discovered in the sands or buried in coffins with the dead, in ancient graveyards in the neighbourhood of Khotan, probably not more than a day or two's journey from the town." One of these places, Aq Sapīl, Mr. Högberg visited himself; and the "two elevated circular stands," which he describes as having been seen by him, curiously suggest themselves as being the surviving bases of two stūpas erected in the closest propinquity: apparently twin-stūpas built on slightly differing levels. Buddhist stūpas, as is well-known, used to stand on a series of circular, concentric basements or terraces, decreasing upwards in diameter, the basements thus forming steps to the uppermost platform, on which the stūpa or cylindrical dome itself was erected. These stūpas were mostly relic-towers, and the relics used to be placed in a small chamber made in the top-most platform, immediately below the cylindrical dome This exactly agrees with Mr. Högberg's description of the "circular stands." The "slight hollow" on the top-most platform would be the remains of the relic-chamber, from which, *e.g.*, the skull with its bag of manuscripts was dug out at Kök Gumbaz. Occasionally a Buddhist stūpa contained several deposits of relics placed at different levels, one above the other. This would seem to have been the case at Qarā Yāntāq. There, it is said, "the two images of horsemen (in M. 2, Set I) were dug up from the interior of the mound," on the top of which the skull was discovered "partially buried." The skull, clearly, had been placed in a chamber, near the surface of the top-most terrace, while the horsemen had been deposited at a lower level, perhaps near the surface of a lower terrace. It would seem that in all the cases reported, the stūpa *proper* or the cylindrical dome, has disappeared, the circular

[28] See the *Report of a Mission to Yarkand in 1873*, at pp. 37, 129.

basements only remaining.[24] This cannot surprise, seeing that these erections were made of unburnt bricks. As Dr. Sven Hedin remarks (p. 740 of his book *Through Asia*) "the natives themselves have observed that the erosive action of the wind is incomparably greater than that of water." Buddhist stūpas used to be coated with a hard, brilliant plaster, to protect them against the erosive action of wind and weather. This was, no doubt, also the case in Khotan; but when outlying settlements were abandoned, and the plastering of the stūpas fell into disrepair, their more exposed domes naturally were corroded and gradually swept away by the periodical sandstorms, the less exposed and stronger basements only surviving.

Ancient Græco-Buddhist Culture.

It is well-known that Buddhism was introduced into Khotan from North-Western India (Kashmir), including Afghanistan and the countries immediately north of it. In connection with this circumstance it is curious to observe numerous points of coincidence in the stūpas of Khotan and those of Afghanistan; and these coincidences themselves are a further argument to support the theory that the find-places of antiquities around Khotan are the sites of groups of stūpas or tumuli, and, in that sense, of ancient places of sepulture. It was a common practice among the Buddhists to build a stūpa, or memorial tower, over the relics of a Saint, and to group round it minor stūpas or tumuli of lesser personages, whether religious or secular. Instances of this practice are repeatedly noted by Hiuen Tsiang in the account of his visit to India.[25] The existence of numerous such groups of stūpas and tumuli in Afghanistan is well-known. Many of them have been opened at different times. In Wilson's *Ariana Antiqua*, there is a long memoir by Masson on the "Topes and Tumuli" opened by him, and the relics found in them. Among them are ornamented funeral jars of a globular form with bones, ashes, and fragments of charcoal; further coins, beads, rings, seals and other trinkets, coloured stones, pieces of crystal, etc.,—all being objects which we shall see represented in the Khotanese collection: some indeed having the very same form. More curious still, in one tumulus which Masson opened, belonging to the group at Passani, he found "in the centre a human

[24] It would be interesting to know why *Kök Gumbaz* or the "blue or green dome" is called so. Could it be the dome of a stūpa still standing? In the Swat country, as Dr. Stein informs us in his *Report of an Archæological Tour with the Buner Field Force*, pp. 11 and 66, the word *gumbaz* is uniformly applied to ruined stūpas.

[25] See Beal's *Buddhist Records of the Western World*, Vol. I, pp. 46, 175 *et passim*.

skull, and beneath it a large steatite vase," containing ashes, coloured stones, beads, etc., also a fragment of a birch-bark leaf inscribed with "Bactro-Pali" (*i.e.*, Kharoṣṭhī) characters.[26] The similarity of this find with that of the skull at Qarā Yāntāq is very striking. There is a passage in the account of the mission of the Chinese Buddhist Sung-yun to India in 518 A.D., which seems to bear on the subject of such sepultures. Speaking of the customs of Khotan, the account says: "they burn their dead, and, collecting the ashes, erect towers over them. When the king dies, they do not burn his body, but enclose it in a coffin and carry it far off and bury it in the desert. They found a temple to his memory, and, at proper times, pay religious service to his manes."[27] This would seem to suggest, that Kök Gumbaz, Qarā Yāntāq and similar spots are ancient sites of the sepulture of kings and chiefs of Khotan. The discovery of the two minature figures of horsemen, (M. 3, Set I) in the same grave with the skull tends to corroborate this conjecture.

The existence of early Buddhist culture in Khotan is thus amply borne out. Much more evidence on this point is afforded by the pottery and terracotta figures, and will be found noticed in that portion of the report which will deal with these objects. Here I will only note that the occurrence of the numerous figures of monkeys and elephants clearly points to an intimate connection of the culture of Khotan with that of India; for these animals are not found in Khotan, while they are indigenous in India. A very early connection of Khotan with India and China is also established by the discovery of Indo-Chinese and Indo-Scythian coins on the one hand, and coins of the Han Dynasty on the other. But further there are distinct traces of Grecian and Parthian influence. For the latter, it is true, there is only one piece of pottery (in M. 2), which bears ornamentation of a distinctly Parthian character. For Grecian influence such as prevailed on the western borders of India, in the earliest centuries A.D. and B.C., there is much more evidence. The style of Graeco-Buddhist ornamentation and sculpture is well marked on many pieces of pottery and sculptured stones. The syrinx, or musical instrument made of a series of graduated reeds, on which monkeys are represented as playing, is distinctly Greek or Grecian: that kind of instrument was not known in India or the Orient. Altogether the treatment of the monkeys, in their varied festive or amorous postures, curiously reminding one of Satyrs and Fauns, is instinct with the ideas of Greek or Roman culture. The Pegasus and Centaur, which are found represented on some seals, are

[26] See *Ariana Antiqua*, p. 94.

[27] See Beal's *Buddhist Records of the Western World*, vol. I, p. lxxxvii.

also distinctly Grecian. Mr. Macartney in his Note on the find-places (see p. xxii) says: "Some of the relics which have been found near Khotan are undoubtedly of Greek origin. In May, 1897, I was shown by a Russian merchant in that town a coin with an inscription in Greek, and three pieces of yellow crystals of an oval shape in which there were beautiful carvings of the classical type."

Local tradition with regard to the makers of the habitations and sepultures around Khotan is very uncertain, and possibly not altogether spontaneous. With reference to Qarā Yāntāq, in Islām Ākhūn's itinerary, already quoted above, Mr. Macartney was informed, that it was once inhabited by "Hindīs," a name by which Buddhists are said to be generally called in Eastern Turkestan, and which clearly points to the direct Indian origin of the Buddhism of that country. With regard to Kök Gumbaz Captain Godfrey reports (in his demi-official letter, No. 5208, dated 15th September, 1897) that "local opinion seems to incline to the belief that the cemetery was either Jew, Kalmuk or Greek. The people to whom these graveyards are attributed are called in the Turki language *Ujāt* which I believe now means "strangers." This word is, however, I am informed, now obsolete. Dr. Bellew, in his History of Kashghar, says that Ujāt means Native Christians, and refers I think, to Native Christians having lived near Khotan."[28] With reference to the last observation of Captain Godfrey's I may note that at Aq Sapīl some sheets and leaves of manuscript were found (in M. 2, Set II) inscribed with characters in white ink, which seem to be Uighur writing such as was once used by the Nestorian Christians.

Need of further exploration.

Considering how much we are at present dependent on native information with regard to every thing connected with these sand-buried sites near Khotan, and how cautiously such information must be received, it is very desirable that the localities should be visited, examined and reported on by some European explorer with archæological experience. This is an undertaking well worth the support of the Indian Government and of Learned Societies.

[28] See the *Report of a Mission to Yarkand*, p. 127. Mr. Shaw in his *Grammar of the Language of Eastern Turkistan* (in the Journal, As. Soc. Bengal, Vol XLVI for 1877), pp. 336 and 345, disputes this and says that Ujāt is the name of a village near Khotan, the inhabitants of which were "bad Musalmans." But the passage from the Taskiratu-l-Bughra, which he quotes, really only proves that the people of Ujāt were considered insincere Muhammadans at the time of its composition. At the time to which Dr. Bellew refers Khotan had not yet been converted to Islām. It was still Buddhist; and the people of Ujāt, if they were not Buddhists, must have been Nestorian Christians. Probably they were the latter, and being forced to adopt Islām, did so only in outward appearance.

CENTRAL ASIAN ANTIQUITIES.

The Central Asian Antiquities which are comprised in the British Collection distribute themselves into the following main classes: (1) manuscripts; (2) xylographs; (3) terra-cottas and pottery; (4) coins and seals; and (5) figures of stone, metal or wood, and other miscellaneous objects.

As the coins present the most serviceable historical and chronological data, it may be best to commence with their description.

Section I.—COINS AND SEALS.

The following is a Summary of the Coins in the Collection:—

I.	Indo-Chinese	coins,	72
II.	Chinese	„	148
III.	Scytho-Bactrian	„	36
IV.	Indo-Scythian	„	10
V.	Sassanian	„	7
VI.	Mediæval Hindû	„	8
VII.	Mediæval Muhammadan	„	127
VIII.	Modern Turki	„	18
IX.	Modern Indian	„	59
X.	Modern European	„	1
		Total Coins	486

I. Indo-Chinese Coins.

There are altogether seventy-two of these coins in the Collection: nine large and sixty-three small ones. They all come from Khotan and

its neighbourhood; and they formed part of the consignments M. 2, M. 3, M. 6, M. 9, G. 5, G. 7, G. 10, and T. 1.

Two coins of this description, one large and one small, were first published by Mr. Gardner in the *Numismatic Chronicle*, Vol. XIX (1879), pp. 275, 276. These likewise were procured from Khotan by Sir T. D. Forsyth. They have been republished by Dr. Terrien de Lacouperie in the British Museum Catalogue of Chinese Coins, p. 394. The large one is also republished in the British Museum Catalogue of Indian (Greek and Scythic) Coins, p. 172. Both coins, especially the small one, were in too imperfect a condition to admit of being fully read. In the present collection there are some much better preserved specimens.

All these coins are of copper. They are not of iron, as was at first erroneously supposed.

Of the large coins, there are three varieties, distinguished by the arrangement of the obverse legend. Of these varieties there are one, three and one specimen respectively. Four specimens cannot be determined. Of the smaller coins there are five varieties, distinguished by differences in the reverse design, and in the arrangement of the legends. Of these five varieties there are 17, 13, 3, 3 and 3 specimens respectively. Twenty-three specimens are too worn or corroded to admit of being determined.

The following is a detailed list of all the coins, large and small, with their weights and measures. Their exact find-place has also been noted, when known: in the other cases it must be understood that the coin came either from Khotan itself or from one of the buried sites near it:—

(*a*) Large Coins.

Ser. No.	Variety.	Weight in grains.	Size in inches.	Consignment.	Find-place.	Figure.
1	I	246·5	1·0	M. 2.		Plate I, 6.
2	II	228·0	1·0	T. 1.		
3	II	200·5	1·0	G. 10.		
4	II	154·0	0·875	M. 9.		
5	III	234·0	1·0	G. 10.		
6	Undeterm.	223·0	1·0	M. 2.	Aq Safil.	
7	do.	213·0	1·0	M. 2.		
8	do.	211·5	1·0	G. 10.		
9	do.	202·0	1·0	M. 2.		

Total weight: 1921·5 Average weight: 213·44 grs.

(*b*) Small Coins.

Ser. No.	Variety.	No.	Weight.	Size.	Consignment.	Find-place.	Figure.
1	I	1	76·0	0·75	M. 2.		Pl. I, 9.
2	I	2	66·0	0·75	M. 2.		
3	I	3	59·0	0·75	M. 2.		Pl. I, 13.
4	I	4	56·5	0·75	M. 2.		Pl. I, 10.
5	I	5	53·0	0·75	G. 10.		
6	I	6	52·0	0·75	M. 3.		
7	I	7	52·0	0·75	G. 10.		
8	I	8	50·5	0·75	M. 6.		
9	I	9	50·0	0·75	M. 2.		Pl. I, 11.
10	I	10	48·5	0·75	G. 5.		Pl. I, 8.
11	I	11	48·5	0·75	M. 2.		
12	I	12	46·5	0·75	G. 7.		
13	I	13	45·0	0·75	M. 2.	Aq Safil.	
14	I	14	41·5	0·75	G. 5.		Pl. I, 18.
15	I	15	39·5	0·625	M. 2.		
16	I	16	32·0	0·625	M. 2.		
17	I	17	21·0	0·625	M. 2.	Aq Safil.	
18	II	1	78·5	0·75	M. 2.	do.	
19	II	2	62·5	0·75	M. 3.		
20	II	3	61·5	0·75	M. 6.		
21	II	4	59·5	0·75	T. 1.		
22	II	5	57·5	0·75	M. 2.	Aq Safil.	Pl. I, 14.
23	II	6	53·0	0·75	T. 1.		Pl. I, 15.
24	II	7	51·5	0·75	T. 1.		Pl. I, 12.
25	II	8	50·0	0·75	M. 2.	Aq Safil.	
26	II	9	49·0	0·75	G. 7.		
27	II	10	48·0	0·75	M. 6.		
28	II	11	46·0	0·75	M. 2.	Aq Safil.	
29	II	12	44·0	0·75	M. 9		
30	II	13	44·0	0·75	G. 10.		
31	III	1	61·5	0·75	M. 6.		
32	III	2	48·5	0·75	T. 1.		Pl. I, 16.
33	III	3	47·0	0·75	G. 10.		Pl. III, 3.
34	IV	1	40·0	0·75	M. 2.		
35	IV	2	30·0	0·625	M. 2.		Pl. I, 17.
36	IV	3	22·5	0·70	G. 10.		Pl. III, 1.
37	IV	4	13·0	0·5	M. 2.	(Mutilated).	Pl. III, 4.
38	V	1	63·5	0·83	G. 10.		Pl. III 2.
39	V	2	60·5	0·75	G. 10.		
40	V	3	59·0	0·80	G. 10.		
41	Undeterm.	1	60·0	0·75	M. 2.		
42	do.	2	59·0	0·75	M. 9.		
43	do.	3	58·5	0·75	G. 10.		
44	do.	4	57·0	0·75	G. 10.		
45	do.	5	55·0	0·75	M. 3.		

Ser. No.	Variety.	No.	Weight.	Size.	Consignment.	Find-place.	Figure.
46	Undeterm.	6	54·5	0·75	M. 2.		
47	do.	7	54·0	0·70	G. 10.		
48	do.	8	50·5	0·75	G. 7.		
49	do.	9	49·5	0·75	M. 3.		
50	do.	10	48·5	0·75	G. 10.		
51	do.	11	48·0	0·75	M. 2.	Aq Safil.	
52	do.	12	47·5	0·75	G. 10.		
53	do.	13	47·0	0·75	M. 2.	do.	
54	do.	14	40·5	0·75	M. 2.	do.	
55	do.	15	40·5	0·625	G. 10.		
56	do.	16	39·5	0·75	G. 7.		
57	do.	17	39·5	0·69	M. 2.		
58	do.	18	35·5	0·69	M. 2.		
59	do.	19	34·0	0·75	G. 10.		
60	do.	20	33·5	0·75	M. 2.	Aq Safil.	
61	do.	21	26·0	0·583	G. 10.		
62	do.	22	25·0	0·625	M. 2.		
63	do.	23	24·0	0·625	M. 9.		

Total weight: 3015·0 Average weight: 47·857 grs.

The following is a description of the coins :—

(*a*) Large Coins. (Plate I, No. 6).

Obverse: Two concentric circles, of which the outer one consists of an ornamental band. In the small area within the inner circle is placed an old form (*a*) of the Chinese symbol (*b*) for 'money.' See Woodcut No. 3. Between the area and the ornamental band runs a Chinese legend, consisting of six symbols. This legend is arranged in three different ways, making three varieties, on which see below, p. 8.

NO. 3.

a *b*

Reverse: Two concentric linear circles; in central area, bare horse with stiff, upstanding mane, trotting to right. Between the circles, an inscription in Kharoṣṭhī characters.

No. 1 of the list, shown in Pl. I, 6, is nearly identical with that figured in the British Museum Catalogue, p. 394, but the Chinese legend, partially read by Dr. T. de Lacouperie, is far more legible.

(*b*) Small Coins. (Plates I, 8–18 and III, 1–4).

Obverse: Chinese legend of three symbols, in old forms; the same on all five varieties.

Reverse: In first and second varieties, bare horse, standing or walking to right; round it a circular marginal legend in Kharoṣṭhī characters, showing in the first variety the letter *ma* (of *mahārāja*), in the second variety, the letter *ti* (of *uthabirāja*), over neck of horse.

The third variety has a Bactrian two-humped camel standing to right, and the same Kharoṣṭhī legend as on the large coins, with *ma* over head of camel.

The fourth variety has the bare horse, walking to right, within a circular linear area, outside which is the Kharoṣṭhī legend, with *mahā* opposite the tail of the horse, but very incomplete.

The fifth variety has a camel walking to right, led by a man, surrounded by a marginal legend in Kharoṣṭhī, with *ma* over the head of the camel. Unfortunately both figure and legend in all three specimens are too badly preserved to admit of being fully deciphered.

(*c*) The Kharoṣṭhī Legend.

The Kharoṣṭhī legend occurs in two different versions: a longer and a shorter one. The former which consisted probably of 20 letters is found on the large coins and on the small coins of the third (or camel) variety. The shorter legend, comprising probably 13 letters, is found on the small coins of the first, second and fourth (or horse) varieties. The length of the two legends can easily be calculated from the space distributable to the preserved and lost portions respectively. What the legend on the small coins of the fifth variety may have been, it is, at present, impossible to say.

The snorter legend is arranged in three different ways: in the coins of the first variety it commences over the neck of the horse, and in those of the fourth, behind its tail, while in those of the second variety, it probably commenced below its feet. It is fullest preserved on the coins Nos. 1 and 4 of the first and No. 7 of the second variety.

The best readings on coins of the first variety are the following :—

No. 1 *maharajutha*(*bi*) × *ja* *Gugrama*(*d*)*asa* (Pl. I, 9).
No. 2 *maharayu* × × × × *Gugratidasa*.
No. 3 *maharayu* × × × × *Gugra*(*mad*)*asa* (Pl. I, 13).
No. 4 *maharayutha* × *ra* × *Gugramodasa* (Pl. I, 10).
No. 7 *mahara*(*ja*) × × × × (*Gu*)*gramo*(*da*)*sa*.
No. 10 *maha* × × × × × × *Gugradamasa* (Pl. I, 8).
No. 14 *maha*(*ra*) × × × × × *Gugra*(*dama*)*sa* (Pl. I, 18).

The best readings on coins of the second variety are the following :—

No. 4 × × *rajuthubi* × × × × × ×
No. 5 × × *rajo* × *bi* × × (*Gugra*) × × × (Pl. I, 14).

No. 6 × ×*rajuthabira*× × × × × × (Pl. I, 15).
No. 7 × × ×*juthabiraja* *Gu(gra)*× × × (Pl. I, 12).
No. 8 × × ×*juthubi*× × × × × × ×
No. 11 × × ×*juthabi*× × × × × × ×
No. 12 × × ×*juthabi*× × × × × × ×
No. 13 × × × × × ×*raja* *Gugra* × × ×

Of the coins of the fourth variety, any thing of the legend is only visible on No. 2, where the following fragment can be read :

maharaja × × × × × × × × × ×

The longer legend is found on the coins of the third variety. On these the letters are written in long, narrow shapes, closely crowded together ; and calculating from what of the legend is preserved, it may be seen that the face of the coin affords room for 20 letters. On the coins of the second variety, the letters are formed large and square, taking up much more space, so that the surface of the coin, to judge from what remains of the legend, cannot have admitted more than 13 letters. The same is the case with the coins of the first variety, where the letters are formed small and square, but are set wider apart from one another than on the coins of the third variety. On the two coins of the latter variety, the legend reads as follows :

No. 1 × × × × × × × × × × × × × *ta(sa)* *Gugra(da)ma*×
No. 2 *maharajasa* *ra(jati)*× *(jasa)* *(ma)*× × *(sa)* *Gugramadasa.*
(Pl. I, 16).

The same long legend, as already observed, occurs on the large coins, with a slightly different form of the name, viz., *Gugramayasa.* It reads as follows :—

(Pl. I, 6).

No. 1, *(ma)harajasa* *(ra)*× × × × × × × × × *(Gugramayasa)*
No. 3, *(mahara)*× × × × × × × × × × × × *(Gu)gra*× × *sa.*

The bracketed letters are distinguishable ;[1] the others are perfectly clear. The whole of the visible letters (eleven) occupy slightly more than one-half of the circle; hence the total inscription must have comprised about 20 letters.

Accordingly the complete legends, probably, stood as follows :

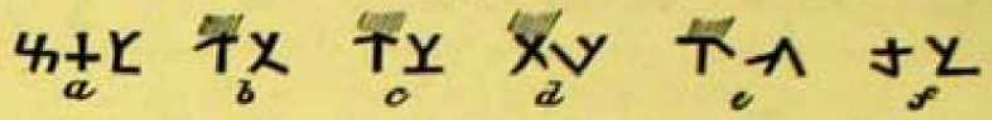
(1) longer legend : *Maharajasa Rajatirajasa Mahatasa Gugramayasa* (or *Gugramadasa* or *Gugradamasa*),

(2) shorter legend : *Maharaj-uthabiraja-Gugramadasa* (or *Gugradmasa* or *Gugramodasa* or *Gugratidasa*). With variants *yuthabi* and *juthubi.*

[1] Some of these bracketed letters do not show sufficiently on the photographs though they are quite distinguishable on the original coin.

The letters which I read *juthabi* or *yuthabi* (or *juthubi*) are puzzling. Their forms, as seen on some of the coins, are clear enough and are shown in the subjoined Woodcut No. 4. Thus (*a*) is seen on

No 4

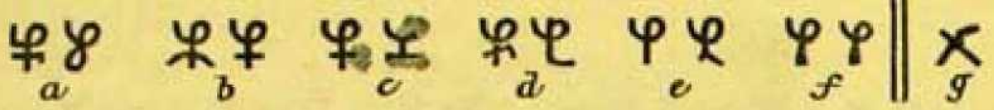


Var. II, No. 11, (*b*) on Var. II, No. 12, (*c*) on Var. II, No. 4, (*d*) on Var. I, No. 1, (*e*) on Var. I, No. 4, and (*f*) on Var. II, No. 8. Of these (*a*) signifies *juthabi*, (*b*, *c*, *d*) signify *jutha*, (*e*) signifies *yutha*, and (*f*) signifies *juthu*. The form of the syllable *bi* never varies. In (*a*) and (*f*) the vowel *u* is formed in an unusual way, but similar to its formation in (*d*) of Woodcut No. 5, below. I would venture to offer the following explanation, which must be understood to be altogether tentative only. I would suggest that the legend might be the equivalent of the not uncommon title Sanskrit *Pṛthvī-rāja* or Pāli-Prākrit *Puthavī-rāja* or *Puthuvī-rāja*, *i.e.*, 'King of the earth.'[2] The complete title on the coins, accordingly, would run Sanskrit *Mahārāja-pṛthvīrāja*, or Pāli-Prākrit *mahārāja-puthavīrāja* or *mahārāya-puthavīrāja*. In Prākrit, as is well-known, the initial consonant of a conjunct word may be elided, and the resultant hiatus-vowels may be contracted: in the present case °*apu*° may be changed to °*aü*°, and contracted to °*o*° or even to °*u*°. We thus obtain the form of the title *maharāj-uthabīrāja* or *mahārāy-uthabīrāja*, with the provincialism of hardening *v*. This explanation postulates a somewhat advanced stage of Prākrit phonetic change; but the existence of such a stage in Khotan at the period of these coins is rendered probable by the change of *j* to *y* in the form *mahārāya*.

[2] I was disposed at one time to find some confirmation of my suggestion in the Chinese *Pi-çi-pi-lien*, which, according to Abel Remusat's *Histoire de la Ville de Khotan*, p. 30, was the royal title of Khotan, and which I thought might represent the Sanskrit *Viçva-rāya* (for *Viçva-rāja*) or 'king of the world,' a synonym of *Pṛthvīrāja*. The context in Remusat seemed to imply that *Pi-çi-pi-lien* was the title of the Khotanese Kings from ancient times up to the beginning of the 7th century A.D., when the '*Weï-si* family (*ibidem*, p. 35) succeeded the *Wang* family. But from what Prof. Sylvain Levi kindly writes me (15th February, 1899) it appears that *Pi-çi-pi-lien* was only the proper name of a particular king of the Wang family which reigned in the 6th and 7th centuries, A.D. *Pi-çi-pi-lien*, accordingly, is more likely to be the Chinese transliteration of some Turkī name, similar to *Mekelien*.

The two first letters *gugra* of the name appear in the following forms :—

NO. 5.



Perhaps the group might also be read *gurga*. The form (*a*) is the commonest; it occurs in Nos. 2, 3, 4 of the first variety, and can be seen very distinctly in No. 3 (Pl. I, 13); it is also seen in the large coin No. 1 (Pl. I, 6). The form (*b*) occurs in No. 1, (*c*) in No. 10, and (*e*) in No. 14, all of the first variety. The form (*f*) occurs in the third variety, and the absence of the conjunct marks at the foot of the two letters is accounted for by the crowded state of the legend.

The final letters *dasa* appear in a curiously conjunct form in the coins Nos. 2 and 4 of the first variety. They are shown as (*g*) in the above Woodcut No. 5. The conjunction is probably merely due to the negligence of the engraver.

There are altogether five varieties of the royal name, all commencing with *Gugra*; viz., *Gugramada*, *Gugradama*, *Gugramaya*, *Gugramoda*, and *Gugratida*. Perhaps *n* may be read for *d* (*Gugramana*, etc.), in every case, or in some of them, seeing that the Kharoṣṭhī *d* and *n* are hardly distinguishable. Seeing also that sometimes *y* occurs for *j* in the title *mahārāja* (*mahārāya*), it may be that, by a similar phonetic process, *Gugramaya* is only another form of *Gugramada*. It is also possible that *Gugramoda* is really intended for *Gugramada*, as what looks like the vowel *o* may be a mere slip of the engraver. In any case there still remain three names which cannot be identified with one another: *Gugramada*, *Gugradama* and *Gugratida*. Accordingly these coins must be ascribed to three, if not five different kings. As all their names begin with *Gugra* (perhaps *Gurga*), they would all seem to have belonged to the same family.

(*d*) The Chinese Legend.

The Chinese legend, also, occurs in two different versions; a longer and a shorter one. The longer, consisting of six symbols, is found on the large coins, while the shorter, consisting only of three symbols, is seen on the smaller coins.

The longer legend is arranged in four different ways, three of which occur in our collection. In the first variety, the legend commences op-

posite the apex of the central symbol (seen at the bottom of the figure in Plate I, 6) and then runs round from right to left. In the second variety it also commences opposite the apex, but runs in the opposite direction, from the left to the right. In the third variety it commences on the left of the central symbol, and runs round from the left to the right. The British Museum Catalogue, No. 1799*a*, presents a fourth variety, in which the legend runs from the right to the left, and commences on the right side of the central symbol.

In all four varieties the legend is identical, as shown in the subjoined Woodcut No. 6:—

NO. 6.

A portion of this legend was read by Dr. T. de Lacouperie, in the British Museum Catalogue, p. 394. I read the whole as follows:—

tchung (1) *liang* (2) *sze* (3) *tchu* (4) *t'ung* (5) *tsien* (6), *i.e.*, "Weight (one) Liang (and) four Tchu (of) copper money."

The symbol which Dr. T. de Lacouperie reads *yh* 'one' does not occur in any of the coins of our collection, nor can I find it on the coin figured by him in the Catalogue, No. 1799*a*. The 5th and 6th symbols were too indistinct on his coin to be read by him. They are clear enough on some of our coins, and are those shown in the above Woodcut. No. 6 is the well-known sign for *tsien* or 'money' (*British Museum Catalogue*, p. xviii). No. 5 is a sign which I have not been able to find in Morrison's dictionary,[3] the only one available to me; nor is it known to any of the Chinese Literati whom I could consult. I take it to be an old form of the symbol 銅 *t'ung* 'copper' (see *ibid.*, p. lxiv), made by omitting the long side-strokes of the upper quadrangle of its right-hand portion. A similar modification occurs in the old form 鑒 of the symbol 關 *kuan* (see *ibid.*, p. 191), and in the old form $\overline{\triangle\triangle}$ of the symbol 兩 *liang* (see *ibid.*, p. 300).

The shorter legend is also identical on all the small coins, though the symbols are drawn in rather varying forms. This is not at all an uncommon practice, as an inspection of the British Museum Catalogue will at once show. The legend, with the varying forms of its symbols,

[3] *A Dictionary of the Chinese Language in three Parts.* By R. Morrison, D.D., 1820.

is shown in the subjoined Woodcut No. 7, which also shows the relative position of the three symbols in the legend.

No. 7.

No. I is the usual form, seen in Plate I, 11. Nos. II, III, IV may be seen in Plate I, 8, 14, 16 respectively. No. V shows a form of the 3rd symbol which I have noticed on coins of the 3rd and 4th varieties, shown in Plate III, 1, 3.

I read the symbols as follows :—

luh (1) *tchu* (2) *tsien* (3), *i.e.*, " six Tchu (of) money."

The second and third symbols of this legend are the same as the fourth and sixth of the longer one. The first symbol, as shown in Figure III, is that given by Dr. T. de Lacouperie, on page xl of his Introduction to the British Museum Catalogue, for *luh* 'six.' The corresponding forms in fig. I, II and IV are merely ornamental modifications. A form of *luh*, much like that in fig. II and IV, occurs in coin No. **453**, of the Br. Mus. Cat., p. 423. Compare also the forms of *luh* in coins No. 753, 816, **159–161**.

The Chinese legends state the weight of the coins. According to them the large coins should normally weigh one *liang* and four *tchu*, while the small coins should weigh six *tchu*. As we shall see presently, these Indo-Chinese coins must be referred to the first and second centuries A.D., *i.e.*, to the time of the Han dynasty in China. That dynasty followed the monetary system of the preceding Tsin dynasty which had doubled the ancient standard. According to this doubled standard the *liang* weighed about 195 grains, and the *tchu*, about 8·12 grains.* Accordingly the normal weight of the large coins should be approximately 227·48 grains, and of the small coins, 48·72 grains. A reference to the preceding list (see pp. 2-4) will show that the actual weights of the coins vary widely from this normal, even fully allowing for much wear and tear. This, however, was the usual condition of the currency in China. Dr. T. de Lacouperie in his Introduction to the British Museum Catalogue (pp. xxiii, xxiv) shows how numerous the variants in weight were, and how " far they were from being

* See Introduction to the Br. Mus. Cat., pp. xlii-xliv.

approximate to the current standard." The variations of the actual from the normal weight appear to have been particularly great under the Han dynasty, for the intermediate usurper Siu Wang Mang (6–25 A.D.) "began by annulling the decrees enacted by the Han dynasty, as he wanted to return to the money of the Tchou dynasty, where 'the mother and the child' (*i.e.*, divisionary piece) weighed in proportion to each other, similarly to those issued by king Wang in 523 B.C."[5] In order to see how far the Indo-Chinese coins conform to the normal weight, we must test them by their average weight. Judged by this test they, curiously enough, very nearly agree with what should be their normal weight. For the average weight of the nine large coins is 213·44 grains (normal 227·48),[6] and of the 63 small coins, 47·857 (normal 48·72). The agreement in the case of the large coins would probably be still greater, if we had a larger number of them to make up the average.

The date of these Indo-Chinese coins can be approximately determined by the following considerations. The fact of their superscriptions being in Indian and Chinese characters and language shows that both those languages must have occupied a recognised position in Khotan at the time when the coins passed current. In the case of the bilingual Indo-Greek coins, Indian was the language of the population of the country, while Greek was the language of the administration or the ruling power. Khotan, so far as known to us, never had a Chinese population; but it fell under the power of China at a very early date. In the sixth year of the Emperor Ming-ti of the Later Han dynasty, in 73 A.D., Kuang-te, the king of Khotan, submitted to the Chinese General Pantchao. Thenceforward the kingdom of Khotan became a regular dependency of China, which formed that kingdom, together with Kashghar and other Central Asian principalities, into an administrative unit under the name of the "Western Countries" and under a Chinese Governor-General,[7] and placed Chinese Governors in Khotan and the other chief towns. Shortly afterwards, King Kanishka of India (about 78–106 A.D.) is said to have held hostages from the Chinese "tributary Princes to the west of the Yellow River," that is, from the princes

[5] See p. 365 of the Brit. Mus. Catalogue.

[6] The weight of the Brit. Mus. specimen, figured on p. 394 of the Catalogue, would seem to be 220 grains; for on p. xliii of the Introduction it is said "the Bactro-Chinese coin of 2 *liang* 4 *tchu* = 220 grs." There is here some confusion. The weight inscribed on the coin is 1 *liang* 4 *tchu* of the Han standard, which is equal to 2 *liang* and 8 *tchu* of the old standard; and both alike are equal to 227·48 grains (normal).

[7] See Abel Remusat's *Histoire de la Ville de Khotan*, p. 3 and *passim*.

included in the Chinese "Governor-Generalship" of the "Western Countries."[8] It is true that there had been some political intercourse between China and Khotan since the days of the Emperor Wuti (140–87 B.C.) of the Earlier Han dynasty, but Khotan only lost its independence in 73 A.D., when it was included in the Chinese "Governor-Generalship" of the Western Countries. The Chinese currency of Khotan cannot be placed earlier than that year. The native kings continued to reign under the Chinese supremacy, and this fact explains why the coins bear bilingual legends. It is distinctly a Chinese currency, because the standard of the coins is Chinese, inscribed in Chinese language and characters, and this fact clearly indicates Chinese supremacy. On the other hand, the reverse of the coins bears the symbols and names of the native kings, in native (Indian) characters,—a fact which indicates both that native kings still continued to reign, and that the language and characters, used by the native administration, were Indian.

The first connection of India with Khotan dates back to the time of king Açoka (264–233 B.C.). Ancient Khotanese chronicles, quoted by Chinese writers, relate that the eldest son of that king, when dwelling in Takṣaçilā in the Panjāb, had had his eyes put out, and the tribal chief who had been guilty of the outrage was banished, together with his tribe, across the Himālayas. There the tribe settled and later on chose a king from among themselves. Soon afterwards they came into collision with another tribe settled to the east of them, whose king had been expelled from his own country. In the result, the western or Indian tribe was conquered, and the eastern king, now uniting both tribes under his rule, established his capital in the middle of the country, at Khotan.[9] This must have been about 240 B.C. The eastern tribe would seem to have been the Uighurs, of the Turkī race. They gradually occupied the whole of Eastern Turkestan before 200 B.C., being pushed forward from the north-east by the Hiungnu or Huns, another Turkī tribe. The latter, in their westward movement, displaced two Turkī tribes, the Yuéchi (or Yueti) and the Uighur; the former migrated to the north, the latter to the south of the Tian Shan mountains, displacing in their turn the Saka tribe which had formerly dwelled there. The Yuechi were gradually driven across the Ili and the Yaxartes. From 163 to 126 B.C., they occupied the country between the latter river and the

[8] See Beal's *Buddhist Records of the Western World*, Vol. I, pp. 57 and 173; also *Numismatic Chronicle*, Vol. IX (1889), p. 272.

[9] See Abel Remusat's *Histoire de la Ville de Khotan*, pp. 37, 38, and Beal's *Buddhist Records of the Western World*, Vol. II, p. 310.

Oxus, and by 26 B.C. they had extended their settlements beyond the Hindukush into Afghanistan. Here they formed a great kingdom under the two Kadphises and under Kanerkes and Hverkes from about 25 B.C. to 180 A.D. Their rule gradually comprised the whole of North-Western India in addition to Eastern Afghanistan. On their coins they used both the Greek and Indian-Kharoṣṭhī characters: the former they retained from their Greek predecessors whose official script it had been; the latter was the script of secular commerce of their Indian subjects. Co-existing with these scripts there were in use also the Indian-Brāhmī characters, favoured by the religious and learned, especially the Buddhists.

Concurrent with the great Yuechi kingdom there was in North-Western India a smaller one of another Turkī race under the kings Maues, Azes, and their successors, from about 50 B.C. to 80 A.D. It did not extend beyond the Panjāb, and the Turkī invaders who founded it, must have entered India through Kashmir and over the Karakorum passes from the direction of Khotan. Here, we have seen, the Uighur tribe, which still continues to form the main stock of the population of the whole of Eastern Turkestan,[10] had gradually established itself in the second century B.C., in constant warfare with the Hiungnus and Sakas. It was no doubt the Uighurs who, similarly to the Yuechis further west, pressed forward and extended their rule into India in the first century B.C. Here they became the neighbours and rivals of the Yuechis, and here also they became acquainted with Greek and Indian culture; for, like the Yuechi Indian kings, the Uighur Indian kings Maues, Azes and their successors have both Greek and Indian-Kharoṣṭhī legends on their coins. The Uighur kingdom, which in the South, (in India), had to contend with the Yuechi, and in the North, (in Eastern Turkestan), with the Hiungnu, at last declined in power. In order to secure the assistance of the Chinese empire, its Northern portion submitted to China and consented to pass under its administration. This happened, as we have seen, in 73 A.D.[11] About the same time its southern portion was annexed by the Yuechi king Kanishka, who extended his rule over Kashmir up to the Karakorum (Tsung-ling) range, and took hostages from the remainder of the Uighur kingdom.[12] Under these altered conditions, the Uighur coinage in Khotan was conformed to the Chinese standard, and its obverse legend, which had hitherto been Greek, was replaced by a Chinese inscription. The reverse legend, on the other hand, continued, as hitherto, to be expressed

10 See N. Elias' *Tarikh-i-Rashidi*, p. 92.

11 See Abel Remusat's *Histoire de la Ville de Khotan*, pp. 3 ff.

12 See Beal's *Buddhist Records of the Western World*, Vol. I, pp. 56, 57.

in the official Indian language and Indian-Kharoṣṭhī characters. This explains the use of the latter amongst a Turkī population, such as that of Khotan must have been. They were the language and script of the Uighur Government, having originally been adopted in India, and surviving in Khotan after the Indian portion of the kingdom had been lost. Similarly the use of the Indian-Uighur types of the bare horse and the Bactrian camel were continued. These types are found on the coins of Maues, Azes, and their successors;[13] and indeed, they rather point to Turkestan as their home-land.

That a species of Indian script was current in Khotan, is well known from Chinese writers. The case is not quite so clear with respect to the language of the country. Hiuen Tsiang (about 645 A.D.) relates that "the written characters and the mode of forming their sentences resemble the Indian model; the forms of the letters differ somewhat; the differences, however, are slight. The spoken language also differs from that of other countries."[14] Another account says that "they have chronicles, and their characters, as well as their laws and their literature, are imitated from those of the Hindūs, with some slight alterations. This imitation has diminished their barbarism, and modified their manners and their language which (latter) differs from that of other people."[15] These statements clearly indicate that the Uighur population of Khotan, originally totally unlettered and uncultured, derived the whole of their ancient culture from India; and this fact well agrees with, and is well explained by, the ancient extension of Uighur rule over North-Western India. At the same time, it is not probable that the Chinese statements about the written characters refer to the Indian-Kharoṣṭhī script. They rather indicate a modified form of Indian-Brāhmī. The Kharoṣṭhī, as seen on the Indo-Chinese coins, does not merely "resemble the Indian model," but is identical with that once current in North-Western India and Eastern Afghanistan. Hiuen Tsiang was a Buddhist monk, and on his travels he resided in Buddhist monasteries, and came in contact almost exclusively with Buddhist culture. The Indian-Brāhmī was the home-script and the peculiar script of Buddhism, and was carried by them wherever they went. It went

[13] See British Mus. Cat., pp. 72, 89, 96, 112. On their coins, as well as on the Indo-Chinese coins, the horse is standing or walking, and is turned to the right. The horse occurs also on the coins of other kings (Euthydemus, Heliocles, Menander, etc.), but it is turned to the left, or is prancing. So also the camel is found on Menander's coins, but it is turned to the left, while on the Indo-Chinese coins it stands to the right.

[14] See Beal's *Buddhist Records of the Western World*, Vol. II, p. 309.

[15] See Abel Remusat's *Histoire de la Ville de Khotan*, p. 37.

with them, as we know from the Bower and Weber Manuscripts to Kuchar, and it is equally probable that it went with them to Khotan. The introduction of Buddhism into both these places may be traced back to as early a time as the first or second centuries B.C. In both places, as the Chinese note, the Indian Brāhmī developed "slight alterations,"[16] known to us in Kuchar as the peculiar Central-Asian Brāhmī.[17] Hiuen Tsiang, in the passage above quoted seems to distinguish between the spoken and the written language of Khotan. By the latter, which he calls "the mode of forming their sentences," and which he says "resembles the Indian model," I presume he means Sanskrit or Pāli, such as was used in Buddhist literature, and which can have been known only to a very limited class of people, the Religious and Learned. The "spoken language," which I take to have been that of the general population, must have been the Uighur Turkī, and this as Hiuen Tsiang says, differed "from that of other countries," *i.e.*, China and India. This view is confirmed by a remark of Sung-yun (518 A.D.) respecting Yarkand. Of this town he says, "their customs and spoken language are like those of the people of Khotan, but the written character in use is that of the Brāhmans,"[18] *i.e*, the Indian Brāhmī. Moreover, Fahian (400 A.D.) reports expressly with regard to the whole of Eastern Turkestan, that though the people speak different Turkī (*Hu*) dialects, "the professed disciples of Buddha among them all use Indian books and the Indian (Sanskrit) language."[19] None of these Chinese Buddhist pilgrims appears to have noticed the existence of the Kharoṣṭhi script, whether in Khotan or in its Indian home-land. The only script of the Semitic class which Hiuen Tsiang noticed, he mentions in connection with the kingdom of Kesh,[20] and this script cannot have been the Kharoṣṭhī, though it may have been allied to it. Possibly in their time, Kharoṣṭhī had practically ceased to exist. In Khotan, at the time of the Indo-Chinese coins, it was evidently the secular official script of the native Government, though not quite exclusively so, as is shown by the Kharoṣṭhī manuscript found near that town by M. Dutreil de Rhins and containing a portion of the Buddhist Dhammapada.[21] It does not seem probable that, after the

16 With regard to Kuchar, see Hiuen Tsiang's remark, in Beal's *Buddhist Records of the Western World*, Vol. I, p. 19.

17 See a description of it in my Report, in the *Journal, As. Soc. Beng.*, Vol. LXVI (1897), p. 242, LXII, p. 4.

18 See Beal's *Buddhist Records of the Western World*, Vol. I, p. lxxxix.

19 See *ibidem*, Vol. I, p. xxiv.

20 See *ibidem*, Vol. I, p. 38.

21 See *Comptes Rendus de L'Académie des Inscriptions*, Vol. XXV, (1897), pp. 251 ff.

severance of the Indian connection of the Uighur kingdom of Khotan, the use of the official Kharoṣṭhī script survived for any great length of time. Its forms, as seen in the Dutreil de Rhins Manuscript and on the Indo-Chinese coins, are much alike, and both are identical with that form of it which prevailed under the Kushana (Yuechi) kings in India, that is, in the first and second centuries A.D. Though its form remained practically unchanged for a century or two longer in its home-land, it is very improbable, to judge from the parallel case of the Indian-Brāhmī, that this would have been the case in a foreign country like Khotan. It is not probable, therefore, that the Indo-Chinese coins can be placed later than the end of the second century A.D. They show, as already remarked, four, if not five, different regal names. Four or five reigns, at an average of 20 or 25 years, occupy a period of about 100 years. This brings us to, at least, the year 173 A.D., as none of the coins can have been struck before 73 A.D. The initial date is certain; the terminal date must be near the end of the second century. The period 73–200 A.D., therefore, is a safe date to give to the Indo-Chinese coins of Khotan.

Within that period, the Chinese records mention the names of four or five kings of Khotan: (1) *Kuang-te* in 73 A.D., who first submitted his country to the overlordship of the Chinese; (2) *Tang-t'sian* in 129–131 A.D., (3) *Kian*, (4) *'An-kue*, son of *Kian*, who succeeded his father in 152 A.D., and (5) *Shansie* in 220–226 A.D.[22] None of these names agrees with any of those on the coins; but they rather look like true Chinese names, so that it would seem that the kings bore duplicate names, native Turkī and Chinese. At that early period, as the Chinese relate, the kings of Khotan were devoted Buddhists, and as such, it may be surmised that they bore names which were the Uighur equivalents of Indian Buddhistic terms. Dharma being a common prefix of many Buddhistic names, *Gugra* might be its Uighur equivalent. A long list of ancient Khotanese royal names, all beginning with *Vijaya*, is given by Rai Sarat Chandra Das from Tibetan sources.[23] If this list can be trusted, *Gugra* might represent *Vijaya*.

II. Chinese Coins.

My knowledge of Chinese is very small, and the only numismatic aid, available to me, is the Catalogue of Chinese Coins in the British Museum by Dr. Terrien de Lacouperie, and an article on Chinese Coinage in the Transactions of the China Branch of the Royal Asiatic

[22] See Abel Remusat's *Histoire de la Ville de Khotan*, pp. 3, 6, 8, 15, 17.

[23] See *Journal, Asiat. Soc. Beng.*, Vol. VI (1886), pp. 197, 198.

Society, Part II for 1848–1850, by C. B. Hillier. I hope that this disadvantage under which I am labouring may be accepted as a sufficient excuse for the imperfections of my descriptions of the Chinese coins in the collection.

With reference to numismatic evolution, Chinese round coins fall into three periods. In the first period, they have no inscriptions whatever. In the second period, they have a legend on the obverse, consisting at first of two symbols, placed to the right and left of the central hole, and afterwards of four, there being two additional symbols above and below the hole: the reverse is blank. In the third period, they have inscriptions both on the obverse and reverse sides, generally consisting of four symbols on each side, distributed on the four sides of the central hole. The first advance to a double-sided inscription consisted either in repeating the obverse legend on the reverse, or in placing on it one new symbol, in most cases a numeral indicative of the value of the coin. There are found occasional anticipations as well as survivals; but roughly speaking, the course of numismatic evolution appears to have been as above explained.[24] This is amply borne out by the coins in our collection.

In point of chronological sequence the coins of the collection also happen to fall into three distinct periods: ancient coins of the 1st to the 3rd centuries A.D., mediæval coins of the 7th to the 13th centuries, mostly of the two dynasties of the T'ang (618–907 A.D.) and the Sung (960–1279 A.D.), and modern coins of the 18th and 19th centuries, issues of the ruling Manchu dynasty. The circumstance of the two large gaps of several centuries each is curious, but perhaps altogether accidental. The presence of the numerous coins of the T'ang and Sung dynasties is probably accounted for by the fact that during the periods of their rule, as shown by the Chinese records,[25] an exceptionally lively intercourse was kept up between China and Khotan.

The total number of Chinese coins in the collection is 148. Among these there are 43 ancient, 77 mediæval, and 28 modern coins. All the ancient and many of the mediæval coins were found in the desert around Khotan. The modern ones came from Khotan itself. They all formed part of M. 2, 3, 4, 6, 9; most of the ancient ones belong to M. 2.

[24] See *British Museum Catalogue*, pp. xxvii and 319. Examples of repetition are *ibidem*, Nos. 1727–1731, 1786–1790, 1877, 1880. Examples of the addition of numerals are Nos. 1767–1778, 1807–1814, of other symbols, Nos. 1782, 1815, 1816, 1818, 1820, **429–436**. Exceptional anticipations of a double-sided legend are Nos. 1752, 1753. Examples of survivals of a two-symbol legend are Nos. **426–438**, 1852–1855.

[25] See Abel Remusat's *Histoire de la Ville de Khotan*, pp 67 ff.

All the ancient coins are of copper, except one which appears to be of lead. All the mediæval and modern coins are of a species of bronze or brass.

(*a*) *Ancient Coins.*

(1) Coins without legends. (Plate II, figs. 1*a–d.*)

These coins number 27. They are of three different sizes:

large,	11 specimens, size 0·7–0·9″,	weight	21·5–31 grs.
middle,	11 „ „	0·66–0·75″, „	11·5–15·5 grs.
small,	5 „ „	0·5″, „	5–8 grs.

Two good specimens are shown in the British Museum Catalogue, large, No. **180** (p. 340), and middle, No. **407** (p. 399), weighing 38 and 19 grains respectively. Most of the specimens in our collection are not in an equally good condition. Their weight is much lighter, their shape is very irregular (some nearly square), and their rim in many cases is very narrow (down to $\frac{1}{12}$ of an inch). They have clearly been subjected to much clipping.

This class of coins appears to have been current under both Han dynasties, the Former or Western as well as the Later or Eastern. Those of our collection must belong to the later period, *i.e.*, 25–220 A.D., as Khotan came into closer contact with China only from about the middle of the first century A.D.

(2) Coins with an obverse legend of two symbols. (Pl. II, 2, 3). The coins of this class number 16. They consist of the following:

(*a*) With the legend *Wu-Tchu* or 'Five Tchus'; 9 specimens; five well preserved (Pl. II, fig. 2), weighing 33–38 grains and measuring 1 inch; four considerably rubbed and clipped, weighing 15–25·5 grains and measuring 0·75–1·0 inches. Compare *British Museum Catalogue*, Nos. **315, 316, 398–403** (pp. 361, 396).

(*b*) With the legend *Ho-tsiuen* or 'Spring of goods'; 2 specimens, weighing 34 and 20 grains, and measuring 0·875 and 0·8 inches; too indifferently preserved to be figured, but like *British Mus. Cat*, No. **365** ff. (p. 334).

(*c*) With unread legend, see Plate II, fig. 3; apparently lead; one specimen; weight 78·5 grs.; size 1·0625″.

The *Wu-tchu* currency was introduced by the Han dynasty, and the *Ho-tsiuen* currency, by the usurper Sin Wang Mang (9–22 A.D.). Both currencies continued into the period of the Later Han dynasty, 25–220 A.D., and the specimens of our collection must be ascribed to that period.

(*b*) *Mediæval Coins.*

(1) Coins with an obverse legend of four symbols.
(Pl. II, 4–18 and Pl. III, 6, 7.)

The coins of this class number 76. They consist of the following currencies :—

(*a*) With the legend *K'ai-yuen-tung-pao*, or 'Current money of the K'ai-yuen period.' This period comprised the years 713–741 A.D., under the Emperor Yuen-tsung of the T'ang dynasty.[26] There are two coins of this period ; weight 49 and 50 grs. ; size 1″. Plate II, 9.

(*b*) With the legend *K'ien-yuen-tchung-pao*, or 'Current money of the K'ien-yuen period.' This period comprised the years 758–763 A.D., under the Emperor Su-tsung of the T'ang dynasty.[27] Of this period there is a very large number of coins in the collection ; altogether 45. They are of three different sizes :

large,	12 specimens ;	size 1·0625″ ;	weight 71–136 grs. (Pl. II, 7).
middle,	3 „	; „ 1″ ;	„ 48·5–49·5 grs. (Pl. II, 6).
small,	30 „	; „ 0·875″ ;	„ 23–41·5 grs. (Pl. II, 5).

Many of these coins were in M. 3 ; some in M. 2.

(*c*) With the legend *Ta-li-yuen-pao*, or 'Principal money of the Ta-li period.' This period comprised the years 763–780 A.D., under the Emperor Tai-tsung II of the T'ang dynasty. There are ten coins of this period, of three different sizes :—

large,	4 specimens ;	size 0·9375″ ;	weight 45·5–59·5 grs. (Pl. II, 4).
middle,	5 „	; „ 0·875″ ;	„ 37–51 grs.
small,	1 „	; „ 0·75″ ;	„ 36 grs.

These belong to M. 2, M. 4, M. 6. A Chinese manuscript petition dated in this period is in the collection of MSS.

(*d*) With the legend *Che-tao-yuen-pao* or 'Principal money of the Che-tao period.' This period apparently comprised the years 984–998 A.D., under the Emperor Tai-tsung (976–998 A.D.) of the Sung dynasty.[28] There is one coin of this period ; legend in "running hand" ; weight 58 grs., size 1″. Figured by Hillier, No. 124 (p. 63). From M. 2.

(*e*) With the legend *King-t'i-yuen-pao*, or 'Principal money of the King-t'i period.' This period apparently comprised the years 998–1008 A.D., under the Emperor Chin-tsung I (998–1023 A.D.) of the Sung dynasty.[29] There is one coin of this period ; weight 36 grs., size 0·9375″. Plate II, 16 ; and in Hillier, No. 126 (p. 63). From M. 2.

[26] See Abel Remusat's *Histoire de la Ville de Khotan*, p. 70.
[27] See *ibidem*, p. 70.
[28] Compare *ibidem*, p. 88. The preceding period was 976–983 A.D.
[29] Compare *ibidem*, p. 86. The following period was 1008–1116 A.D.

(*f*) With the legend *T'ien-çing-tung-pao*, or 'Current money of the T'ien-çing period.' This period comprised the years 1023–1034 A.D., under the Emperor Tin-tsung of the Sung dynasty.[30] There is one coin of this period; weight 55 grs.; size 1". Plate II, 18.

(*g*) With the legend *Kia-yeu-tung-pao*, or 'Current money of the Kia-yeu period.' This period comprised the years 1056–1064 A.D., under the Emperor Jin-tsung of the Sung dynasty.[31] There are two coins of this period; weight 47·5 and 55 grs.; size 1". Plate II, 15.

(*h*) With the legend *Che-ping-yuen-pao* or 'Principal money of the Che-ping period.' This period comprised the years 1064–1068 A.D., under the Emperor Ying-tsung of the Sung dynasty.[32] There is one coin of this period; weight 52·5 grs., size 1". Plate II, fig. 8; and in Hillier No. 138 (p. 68). From M. 2.

(*i*) With the legend *Yuen-fung-tung-pao* or 'Current money of the Yuen-fung period.' This period comprised the years 1078–1085 A.D., under the Emperor Chin (Shin)-tsung II of the Sung dynasty.[33] There are two coins of this period; one with the legend in "running hand," the other, in ordinary script; weights 35 and 32·5 grs., size 1" and 0·9375". Plate II, 12, and Hillier No. 140, p. 71. From M. 2.

(*k*) With the legend *Yuen-yu-tung-pao* or 'Current money of the Yuen-yu period.' This period comprised the years 1086–1093 A.D., under the Emperor Che-tsung of the Sung dynasty.[34] There are three coins of this period; two with the legend in "running hand," and one with it in "seal-characters." Weight of the former, 60·5 and 39 grs.; size 0·9375" and 0·875"; Plate II, fig. 13. Weight of the latter, 68·5 grs.; size 0·9375"; in Hillier, the 2nd under No. 141 (p. 71). From M. 2 and M. 6.

(*l*) With the legend *Chao-çing-yuen-pao* or 'Principal money of the Chao-çing period.' This period comprised the years 1094–1097 A.D., under the Emperor Che-tsung of the Sung dynasty.[35] There are two coins of this period, one with the legend in "running hand," the other with it in "seal-characters." Weight, 54 and 51 grs.; size 1" and 0·9375" respectively. Plate II, fig. 17 and fig. 14; in Hillier, No. 142 (p. 72). From M. 2.

(*m*) With the legend *Tsung-ning-tchung-pao* or 'Weight-money of the Tsung-ning period.' This period comprised the years 1101–

[30] See *ibidem*, p. 90.
[31] See *ibidem*, p. 91.
[32] Compare *ibidem*, p. 91.
[33] Compare *ib.*, pp. 92, 95, 97. The preceding period was *Hi-ning* 1068–1077 A.D.
[34] See *ibidem*, p. 97.
[35] See *ibidem*, p. 98.

1106 A.D., under the Emperor Hwei-tsung (1101–1126 A.D.) of the Sung dynasty.[36] There is one coin of this period; weight 176 grs.; size 1·416″. Plate III, 7 (inverted), and Hillier No. 145 (p. 74). From M. 9.

(*n*) With the legend *Kuang-ting-yuen-pao* or 'Principal money of the Kuang-ting period.' This period was current under Shin-tsung in the State Hear, apparently in the 13th century; see Hillier, No. 194 (p. 104). There is one coin of this period; weight 58·5 grs.; size 1″. Plate II, fig. 10. From M. 2.

(*o*) With the legend *King-hing-tung-pao* or 'Current money of the King-hing period.' The exact date of this period appears to be unknown; see Hillier, No. 308 (p. 154); it should be somewhere in the time of the T'ang or Sung dynasties. There is one coin of this period; weight 41·5 grns.; size 0·9375″. Plate III, No. 6. From M. 2.

(*p*) With unread legends. There are three coins of this kind, which I cannot identify in Hillier's article. They all have the term *tung-pao* which refers them to the time of the T'ang or Sung dynasties. One of them is shown on Plate II, fig. 11. Weights 39·5, 51·5, 58 grs.; size 0·9375–1″. From M. 2.

(2) Coins with obverse and reverse legends. (Pl. II, fig. 19).

There is only one coin of this class, which I have not been able to identify in Hillier's article. I read the obverse legend *Li-yung-tung-pao* or 'Current money of the Li-yung period.' The reverse has only one symbol *chen* or 'a bazar.' In Hillier's article I find this symbol only on the reverses of certain coins of Yung-ming-wang and Chang-hin-chung (Nos. 254 and 259, pp. 136 and 139), who are said to be princes at the close of the Ming dynasty, *i.e.*, 1644 A.D. Weight 55 grs., size 0·9375″.

(*c*) *Modern Coins.*

The total number of modern coins is 28. They fall into the following classes:

(1) Coins with Chinese legends on both sides. Of these there are altogether 24, of the following reigns:—

(*a*) With the obverse legend *Kang-hi-tung-pao* or 'Current money of the Emperor Kang-hi,' who reigned from 1661–1722 A.D. Of his reign there are two coins, with the same reverse legend of two words in Manchu characters *pao tsiuen* or 'source of money,' *i.e.*, mint Peking. Weight 70 and 50 grs.; size 1·0625″ and 0·875″. Plate II, 20.

(*b*) With the obverse legend *K'ien-lung-tung-pao*, or 'Current money of the Emperor K'ien-lung,' who reigned 1735–1796 A.D. Of

[36] Compare *ibidem*, p. 99. The following period was Tai-Kuen 1107–1111 A.D.

his reign there are 14 coins. The reverse has varying Manchu legends of two words. Weight 44–70 grs., size 0·875–1″. Plate II, 21.

(*c*) With the obverse legend *Hien-fung-tchung-pao*, *i.e.*, 'Weight-money of the Emperor Hien-fung,' or *Hien-fung-yuen-pao*, *i.e.*, 'Principal money of Hien-fung,' who reigned from 1850–1861 A.D. Of his reign there are eight coins. One is of bronze, very large, and has a trilingual reverse legend, in Chinese (above and below the hole) *tung* 100 or 'value 100 cash,' in Persian (to the right) يارکند or (mint) 'Yārkand,' and in Manchu (to the left), see Plate II, 30. The other seven coins are of brass, of two different sizes, and with a bi-lingual reverse legend. The larger one (Plate III, 5) has in Chinese (above and below) *tung* 15 or 'value 15 cash,' the smaller ones have *tung* 10 or 'value 10 cash.' In addition all seven coins have a Manchu legend (right and left). (Plate II, 22).

Very large,	1	specimen	; size	2·0826″	;	weight	576 grs.
large,	1	„	; „	1·75″	;	„	351 grs.
small,	6	„	; „	1″	;	„	76–118 grs.

(2) Coins with Persian legends on both sides. There is one coin of this kind, of copper. Plate II, No. 23. It is made in the Chinese fashion, but is probably a coin struck during one of the more recent periods of Muhammadan independence of Kashghar. The legend is not fully read.

Obverse.	*Reverse.*
سيد غازي راشيدين خان ٦	ضرب (دار السلطنة) کوجا

The reverse (over *salṭanat*) apparently bears the date 1283 Ḥ., nearly obliterated, which would be 1866–1867 A.D., or the second year of Yaqūb Beg's revolt,[87] and with which the number 2 on the obverse would agree. Kūjā, which is quite distinct, may be intended for *kūchā* (Kuchar), but the words in brackets are uncertain; and I am unable, with the means at my command, to identify the ruler's name recorded on the obverse. Weight 48 grs.; size 1 inch. From M. 2.

(3) Coins or Tokens with a Chinese legend on one side only. There are three of these pieces which are perhaps rather tokens than coins. I can obtain no information on them. They are shown on Plate II, fig. 25. They first bears the symbol for *tsien* or 1000; the two other symbols I do not know. They are of bronze, and weigh 89·5, 80·5 and 108·5 grs.; size 0·83″. From M. 2.

[87] See Dr. Bellew in Sir T. D. Forsyth's *Report of a Mission to Yarkand in 1837*, pp. 208-213.

III. Scytho-Bactrian.

With the exception of two doubtful specimens, probably all the coins of this class, numbering 36, have come from Western Turkestan (Samarkand, Tashkend, etc.). They belong to G. 4, and were briefly reported on by me in my letter to the Under-Secretary, Government of India, Department of Revenue and Agriculture, dated the 20th November, 1897. The two exceptions belonged either to M. 2 or M. 6, and come from one of the buried sites lying to the north of Khotan.

(*a*) *Imitations of Bactrian Coins.*

There are seven of these; all silver tetradrachms. They imitate the coins of Euthydemus and Heliocles. The former reigned in Bactria about 210–190 B.C.; the latter, who appears to have belonged to a rival family, about 160–120 B.C. During the reign of the former, Saka tribes occupied the Northern provinces of the Bactrian empire between the Oxus and Yaxartes. During the reign of the latter, the Sakas, being driven out by Kushan (or Yue-chi) tribes, occupied Bactria south of the Oxus.[88] Their chieftains imitated the coins of their contemporary Bactrian rulers. These coins can be easily recognized by their degradation, both in point of design and of weight.

The best of the seven coins are two in imitation of Heliocles, of his well-known type: Bust of King on obverse, and Standing Zeus on reverse, as in the British Museum Catalogue, plate vii, fig. 2. One, which weighs 231 grains (full weight 264), measures 1·25″, and is fairly good in design (with ringlet for omikron), though much worn, may possibly be a genuine coin of Heliocles. It has the monogram of Brit. Mus. Cat., No. 4 (p. 21). The other weighs only 219 grains (size 1·25″), and, as the semi-barbarous reverse shows, is clearly a Saka imitation: but the curiosity of it is, that while it has an imitated Heliocles reverse, it has retained an apparently genuine Eukratides obverse; see Plate III, 10. Eukratides (c. 190–160 B.C.) was the predecessor, and perhaps father, of Heliocles. The imitated Heliocles reverse is very fairly done, it has the full Greek legend, but with a dot for omikron, and a rather rude figure of Zeus. Its monogram is . Both this and the first-mentioned coin must be early imitations, and may be referred to about 150 B.C.

The remaining five coins are imitations of Euthydemus, of his well-known type with Head of King on obverse, and Sitting Heracle

[88] See the outlines of Bactrian history in the Introduction to the British Museum Catalogue, pp. xviii, ff.

on reverse, with club resting on his knee. One of them, which is the heaviest, weighing 170 grains and measuring 1″, has the king's portrait as shown in Brit. Mus. Cat., pl. ii, fig. 1–4. It had also an entirely Greek legend, which, however, is almost totally obliterated. The other four coins, which only weigh from 155 to 144 grains, show the king's face as portrayed in Brit. Mus. Cat., pl. i, fig. 11, (also *Ariana Antiqua*, pl. i, figs. 2–4, and Rapson's *Indian Coins*, pl. i, fig. 18, in the Indo-Aryan Encyclopedia). Both types of face, however, are very fairly imitated, see Plate I, Nos. 2 and 3. One of the four coins, which weighs 144 grains (size 1″), had an entirely Greek legend, now badly effaced; but sufficient traces remain to show that it had the name of Heliokles struck over that of Euthydemus. The two names were not struck accurately in the same line, consequently M (of Euthydemus) is still seen slightly projecting over the line of Heliokles, of which latter name K is fully, and ΛI partially recognizable; as shown in the annexed woodcut; see Plate III, 11.

No. 8.

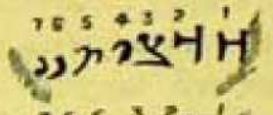
The other three coins are bilingual, having the king's name in native Bactrian letters, while the title in Greek characters is seen in its usual place to the right, or behind the back, of the Sitting Heracles; see Plate I, Nos. 2–4. Of the Greek title ΒΑΣΙΛΕΩΣ only the three letters ΣI> or ΣIV (*i.e.*, with inverted Λ) together with traces of A before and E after them are clearly legible.[89] Coins of this description, that is, with the title to the right and the name in Bactrian letters to the left of Heracles, appear to have been found previously. Two such coins, from the collection of General Fox (if I understand the account correctly) are described by Mr. Thomas in his edition of Prinsep's *Indian Antiquities*, vol. I, p. 32. But, so far as I know, none of them has ever been figured. Similar coins, but with the Greek and Bactrian legends transposed, that is, the title in Bactrian and the name (Euthydemus) in Greek, have been published. One, in rather good preservation, has been figured by Sir A. Cunningham in the *Numismatic Chronicle*, vol. IX (1889), pl. xiii, (also in Rapson's *Indian Coins*, pl. i, 19). Another series of similar coins has the whole legend in Bactrian characters, see *Numismatic Chronicle*, vol. IX., pl. xiii, 6, also *Ariana Antiqua*, pl. i, 9, 10, *Indian Antiquities*, pl. ii, 6. It is probable that, as Sir A. Cunningham says (*Num. Chron.*, vol. IX, p. 307), the oldest imitations are those with Greek legends only, next come those with mixed legends of rude Greek and Bactrian letters, the latest are those with Bactrian characters only. In the second class,

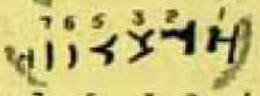
[89] On the photographic plates they are not so distinct as on the original.

I suppose, those coins which preserve the Greek fashion of arranging the legends, and show the title on the right in Greek, and the name on the left in Bactrian, may be considered to be older than those which show the mixed legends in the reversed position, *i.e.*, the name in Greek on the left, and a Bactrian legend on the right, the latter also being a name. Accordingly the bilingual coins of the present series may be referred to about 130 B.C. It would also seem, if Dr. Gardner's theory of the change of standard is correct (see Brit. Mus. Cat., Introd., pp. lxvii, lxviii), that these coins are didrachms of the Persian standard (full weight 160–170 grains), such as began to be minted in Heliocles' reign.

Seeing that the Bactrian legend [40] on our coins takes the place of the Greek name, it seems reasonable to assume that, like the latter, it runs parallel to the Greek title and must be read from the outside of the coin. This assumption is certainly supported by the general appearance of the characters, which, after the Semitic fashion must be read from the right to the left. They are shown in the subjoined woodcut.

No. 9.

(1)  Plate I, No. 2. W. 155 grs.

(2)  do. No. 3. W. 148 grs.

(3) do. No. 4. W. 145 grs.

The third, fourth and fifth letters of No 1 legend have a distinct resemblance to the Kharōṣṭhī letters *ja*, *a* and *ka*; and at first I was disposed to take the second letter as a crude Kharōṣṭhī *ra*, and to read the whole as a mutilation of *(ati)raja Aka(thukleyasa)*. But the

[40] In order to prevent any misunderstanding I may explain that I use the term Bactrian in the definite sense of referring to Bactria *proper*, and the immediately adjacent northern provinces of what was once the Bactrian Kingdom. What I wish to suggest (the suggestion only to be taken for what it may be worth) is that corresponding to the modified Aramaean script current to the South of the Paropamisus and known as Kharoṣṭhī, there may have been another modified and allied Aramaean script current to the north of that range, of which the letters on the coins in question may be witnesses. This suggestion refers only to the script whether the language hidden in the legends of the coins was a species of old Turkī or old Iranian is a point on which I hazard no opinion. For a similar suggestion, if I understand it rightly, see Isaac Taylor's *The Alphabet*, Vol II, pp. 232, 233.

remaining signs do not suggest Kharōṣṭhī letters. The fifth letter of Nos. 2 and 3 suggests the Kharōṣṭhī *ē*; but on the whole the three legends suggest themselves as identical; for the first three letters in all are clearly the same; so are most probably the sixth and seventh; and the fifth letter of Nos. 2 and 3 may be only a badly drawn form of the corresponding letter in No. 1. The only apparent difference between the three legends is, that the fourth letter of No. 1 is wanting in Nos. 2 and 3. I am not able to decipher the legend; but considering the juxtaposition with the other coins of Euthydemus and Eukratides which bear the name of Heliocles, I would like to suggest that the Bactrian legend might also contain that name. The alphabet current in Bactria must have been one of the very early modifications of the Aramaean, similar to the ancient Pahlavī and Kharōṣṭhī. The first and fifth letters are very like the Pahlavī *h* and the Kharōṣṭhī *k* respectively. The second letter resembles the Kharōṣṭhī *l*. The third and fourth letters resemble the Pahlavī *aleph* and *vau* respectively, and together might have been used to express the vowel *o*. In Nos. 2 and 3 the fourth character is omitted; and the third might also be taken to represent the Aramaean *'ayin* and to express the vowel *o*. Anyhow the initial four or five characters may easily be interpreted to represent *h-l-o-k*, the initial portion of the name *Heliok(les)*. It is more difficult to fit-in the remainder, unless we may assume that the name was pronounced with *r* instead of *l*, as in its Indian form *Heliyakreya*. In that case the sixth letter is *r*, in its form closely resembling the corresponding Pahlavī and Kharōṣṭhī characters. The seventh letter appears to be mutilated, and there may have been an eighth; but I do not know what the genitive inflection of the local Bactrian or Scythian dialect may have been in those days. Thus the characters may represent the letters *h-l-o-k-r*, which would well enough make up the name of Heliokles.

(*b*) *Coins of Hyrkodes.*

There are twenty-six coins of Hyrkodes, about 110 B.C., silver obols; mostly of the two well-known types, with Head of King on obverse, and either Standing Figure (17 specimens), or Head of Horse (7 spec.) on reverse, as shown in Brit. Mus. Cat., pl. xxiv, 10 (10 spec.), *ibidem*, pl. xxiv, 11 (7 spec.), and *ibid.*, pl. xxiv, 12 (7 spec.). But there are two obols, one being a new variety of the well-known type, the other an entirely new type. The new variety (see Plate III, No. 8) shows on the reverse the Standing Figure holding a spear in his left hand, while the usual variety shows the spear in his right hand. Weight 13 grs.; size 0·5″. The new type (see Plate III, No. 9) shows the usual Head of King on the obverse, but the reverse has a standing figure to the

right, apparently Nike standing on a scroll (cloud ?) with traces of a Greek legend. The King's head is distinctive for this coin. Size 0·5625". Weight 17 grs.

(c) *Coin of Azes.*

There is one coin of Azes, c. 30 B.C., silver; nearly the entire legends of both sides clipped away; of the well-known type with mounted King on obverse, and Zeus holding Nike on reverse; apparently in every respect (incl. of monograms) the same as Brit. Mus. Cat., No. 32, p. 75. Weight 36 grs., size 0·5625".

(d) *Uncertain Coins.*

These are two copper coins, from the neighbourhood of Khotan; apparently Indo-Bactrian, but too much worn to permit of identification. One is a small round coin, measuring $\frac{1}{2}$ inch, weighing 18·5 grs., and showing on one side traces of a bull's head facing (?), within an irregular square, enclosed within a marginal circle of dots, without any legend: the other side is entirely indistinguishable. The only, hitherto known, Indo-Bactrian coins with a bull's head facing, so far as I know, are two square copper coins of Menander, in Brit. Mus. Cat., No. 66, p. 49 and No. 4, p. 169 (pls. xii, 5 and xxxi, 10). The other is a small, apparently square coin, measuring $\frac{5}{8}$ of an inch, weighing 11 grs., and showing on one side traces of a conventional stūpa (?) surrounded by an illegible legend: the other side is quite indistinguishable. The only, hitherto known, coin with a stūpa, I believe, is a square copper one of Agathocles, in Brit. Mus. Cat., No. 15, p. 12 (pl. iv, 10).

IV. Indo-Scythian Coins.

The coins of this class number 10, and belong to two distinct periods, an earlier from about 50–130 A.D., and a later from about 490–570 A.D.

(a) *Early.*

These coins, numbering 9, were found in the collections M. 2, M. 3, M. 6, G. 10, and T. 1. They came from the Khotan country, and their condition shows that they have been dug out from ancient sites.

(1) Kadphises II, c. 50 A.D., two coins, copper; obv. and rev. designs just discernible, legends quite obliterated; type (obv. King Standing; rev. Çiva and Bull) as shown in British Museum Catalogue, pl. xxv, No. 12. Size 1·0". Weight 240, 5 and 181·5 grs.

(2) Kanerkes, c. 78–110 A.D., six coins, copper, of two different sizes; all in very poor condition.

(*a*) four coins; obv. King standing to right, rev. figure standing to right, its posture resembling MIOPO or MAO or AΘPO; there are only faint traces recognizable; on one obverse also traces of the Greek legend. Two weigh 54 grs, one 64, and one 46 grs., but a piece of the last is broken off its edge. Size of all, 0·7″.

(*b*) two coins; size 0·5″; weight 31·5 and 20·5; one reverse shows figure and legend MAO; the other shows traces, apparently of OADO (figure stepping to right, with both arms uplifted).

(3) Hoerkes, c. 110–130 A.D., one coin, copper, in poor condition; size 0·875″; weight 78·0 grs., obv. King standing to right; rev. faint traces of Çiva and Bull to left.

(*b*) *Late.*

(1) Toramāṇa, c. 495–510 A.D., one coin, copper, indifferent condition. See Cunningham's *Coins of Mediæval India*, p. 42, pl. iii, 1, 2. Size 1·0″. Weight 83·0 grs.

V. Sassanian Coins.

(c. 458–484 A.D.).

There are seven (or six) of these, all apparently of Fīrūz II (458–484 A.D.) Plate I, Nos. 5 and 19. They belong to M. 2. They are of some mixed metal, and inextricably baked together in two clumps, one consisting of three and the other, apparently of four coins, weighing 192·5 and 205·6 grs. respectively, and measuring 1·125″.

VI. Mediæval Hindu Coins.

(c. 900–1100 A.D.).

These coins number 8, and belong to the following two classes,

(*a*) *Mahārājas of Kashmir.*

The Kashmir coins number 6. They belong to M. 6, and were procured from Khotan, probably found in its Bazars, and not in sand-buried sites. They are similarly still found in Kashmir and India. There has always been commercial intercourse between Khotan and Kashmir.

(1) A very early coin, but unknown. No legend on obverse, one akṣara, illegible, on reverse.

(2) Sugandha, c. 924–926 A.D., one coin, copper. As in *Journal, As. Soc. Beng.*, vol. XLVIII (1879), p. 281, pl. xi, No. 4.

(3) Dikṣēma Gupta, c. 971–979 A.D., one coin, copper. As in *ibid.*, pl. xi, No. 6.

(4) Diddā, c. 1001–1024 A.D., one coin, copper. As in *ibid.*, pl. xi, No. 11.

(5) Harṣa, c. 1062–1072 A.D., two coins, copper. As in *ibid.*, pl. xii, No. 15.

(*b*) *Brāhman Kings of Kabul.*

Sāmanta Deva, about 926–940 A.D.; 2 coins, silver; of the so-called "Bull and Horseman" type, as in Prinsep's *Indian Antiquities* (ed. Thomas), Vol. I, Plate XXV, 3, 4, 5; weight 46 and 44 grs.; size 0·7 and 0·625". From G. 4.

VII. Mediæval Muhammadan Coins.

(c. 800–1585 A.D.).

The total of these coins is 127. Many of them, as will be noticed under the several coins, belong to G. 4, and were obtained in Western Turkestan. Of the others, belonging to M. 2, M. 6, many were found in the Takla Makan desert; but it is probable that the more modern ones were procured in Khotan itself and its bazars.

These coins belong to very different classes and ages. In the following list they are arranged in chronological order.

(*a*) *'Abbāsī Khalīfahs.*

Ar-Rashīd; 1 coin, silver, like *British Museum Catalogue*, Vol. I, Plate V, No. 224 (p. 83); with a loop for suspension; mint Madinatu-l-Islām, date 192 H. (=807 A.D.): weight 47·5 grs., size 0·83". Belongs to G. 4.

(*b*) *Khāns of Turkistān.*

(1) Yilik Khān; 3 coins, silver, like Br. Mus. Cat., Vol. II, Plate V, No. 433 (p. 121); two of mint Samarqand,[41] dates 397 and 39[8] H, (=1006 and 1007 A.D.), weight 35·5 and 42 grs., size 0·9375" and 1·03125"; one of mint Sarraqusṭah, date 394 H. (=1003 A.D.) weight 38 grs., size 0·9375", see Plate I, fig. 21. The latter as well as one of the Samarqand coins have on the reverse area الله above and بهال below the central legend, but nothing corresponding on the obverse, while the other Samarqand coin has لله and نصر on the reverse and بلق or بلو on the obverse. From M. 2.

Yilik Khān, a chief of the Uighurs, is also known as Satūq Bughrā Khān. He lived from 333–429 H. (=944–1037 A.D.), to the age of 96 years. He was the founder of a very extensive, but short-lived empire of the Uighurs, with a capital at Kāshghar. See Dr. Bellew in Sir T. D. Forsyth's *Report of a Mission to Yarkand in 1873*, pp. 125,

[41] On one of them apparently spelled *Samarkand*.

126 (also 121, 130), and Shaw's *Grammar of the Language of Eastern Turkistān*, in the Journal of the Asiatic Society of Bengal for 1877, p. 334.

(2) Muḥammad Arslān Khān; 14 coins; all copper; not in the *British Museum Catalogue*; date and perhaps mint were in the marginal legend, which is almost entirely clipped off in all specimens. They are from M. 2, M. 3, M. 9 and G. 10. There are three varieties, as follows :—

First Variety. (Plates I, 22 and III, 15).

Six coins. Weight 105·5–62·5; size 0·9″.

Obverse.	Reverse.
Single-lined area.	Single-lined area.
لا اله الا	بالله[42]
الله وحده	المستنجد
لا شريك له	ارسلان خا
	محمد ن

Both margins cut away.

Second Variety.

Three coins. Weight 81–92·5 grs.; size 0·9″.

Obverse.	Reverse.
Single-lined area.	Single-lined area.
لا اله الا	بالله
الله محمد	المستنجد
رسول الله	ارسلان خا
	محمد ن

Margins cut away; but in one case سنة still visible.

Third Variety. (Plate I, 24).

Five coins. Weight 116·5–71·5 grs., size 0·9″.

Obverse.	Reverse.
Area within two single-lined circles, with dots between.	Area do.
Legend as in the first variety.	بالله
	المستنجد
	محمد ارسلا
	خان ن

No marginal legends.

[42] In most cases spelled باالله.

Muḥammad Arslān Khān was a son of 'Ālā Nūr Khānim, a daughter of Satūq Bughrā (or Yilik) Khān and wife of Toq Būbā Khān; he succeeded in or about 441 Ḥ. (=**1049 A.D.**) his uncles Ḥasan Bughrā, Ḥusain Bughrā, and Yūsuf Qādir who reigned, in the aggregate, twelve years. Both Ḥasan and Ḥusain, as well as Muḥammad Arslān's half-brother Sayyid 'Āli Arslān Khān were "martyred" in battle against the "infidel" Buddhists of Khotan. See Bellew, *ibidem*, pp. 126–129 and Shaw, *ibidem*, pp. 334, 335, 339. The term *Al-mustanjid-billah* means 'Seeker of help from God.'

(*c*) *Ghorī Sulṭāns.*

Muḥammad bin Sām; 2 coins; mixed silver; like *British Museum Catalogue* (Sultāns of Delhi), Plate I, No. 12, (p. 9), also No. 10 in Thomas' *Chronicles of the Pathan Kings of Delhi*; of the "Bull and Horseman" type; date *circa* **1195 A.D.**; weight 45·5 and 53 grs., size 0·625". From G. 4.

(*d*) *Urtuqīs of Māridīn.*

'Alāu-d-dīn Kaiqobād; 1 coin, copper; like *British Museum Catalogue*, Vol. III, Plate IX, No. 474 (p. 169, under Nāṣiru d-dīn's coins); mint lost, date 630 Ḥ. (=**1232 A.D.**) with ثلثين سنة on the left of the central legend of reverse; weight 135·5 grs., size 1·16". Plate I, fig. 20. M. 2 (?).

This species of coin seems to have been imitated in making ornamental plaques, and guards for binding block-prints; see below General Remarks on Block-prints and Plate IV, figs. 2 and 3.

(*e*) *Khāns of the Golden Horde.*

(1) Jānī Beg Khān; 2 coins, silver; like Br. Mus. Cat., Vol. VI, Plate VII, No. 388 (p. 133); mint Khwārizm, date 743 Ḥ. (=**1342 A.D.**); weight 28·5 grs., size 0·6". From G. 4.

(2) Bardī Beg Khān; 1 coin, silver; like *ibidem*, No. 443 (p. 146) mint Khwārizm, date 760 Ḥ. (=**1358 A.D.**); weight 30·5 grs., size 0·6". Plate I, fig. 29.

(*f*) *House of Timūr.*

(1) Shāh Rukh; 1 coin, silver; similar to Br. Mus. Cat., Vol. VII, Plate II, No. 61 (p. 24), but adds ثعلے at beginning of third line, as in No. 80 (p. 29); mint and date lost (reign **1404–1447 A.D.**); weight 78 grs.; size 0·875". Plate II, fig. 27. From G. 4.

(2) Sulṭān Aḥmad (1467–1493 A.D.); 1 coin, silver; the same as *ibidem*, No. 61 (p. 24) of Shāh Rukh, but counter-struck with a

six-foil die of Sulṭān Aḥmad, as in *ibidem*, No. 117 (p. 42); mint obliterated by counter-struck die, date 828 H. (=**1424 A.D.**); weight 77·5 grs., size 0·875″. Plate I, fig. 25. From G. 4.

(g) Sultāns of Kashmir.

(1) Zainu-l-'Abidīn, **1417–1467 A.D.**, one coin, copper. Like *Journal, As. Soc. Beng.*, Vol. XLVIII (1879), p. 284, pl. xiii, No. 2.

(2) Ḥaidar Shāh, **1467–1469 A.D.**, one coin, copper; date illegible. Like *ibidem*, pl. xiii, No. 5.

(3) Ḥasan Shāh, **1469–1481 A.D.**, one coin, copper; double-struck on a coin of Ḥaidar Shāh; date illegible.

(4) Muḥammad Shāh, **1481–1537 A.D.**; two coins, copper; dates illegible. Like *ibid.*, pl. xiii, No. 7.

(5) Fatḥ Shāh, **1483–1520 A.D.**, two coins, copper; dates illegible; one shows تسعين 90 (between 919 and 926 Ḥ. or 1513 and 1520 A.D.) Like *ibid.*, pl. xiii, No. 8.

(h) Unidentified.

(1) Seven coins, copper; not in *British Museum Catalogue*; mint Kāshghar, date 950 Ḥ. in words (=**1543 A. D.**); weight 80·5–123 grs.; size 0·9375–1·2″. From M. 2. Plate II, fig. 26*a–d*.

Obverse.	Reverse.
Single-lined large circular area, within circle of dots.	Small central square, with semicircles upon the four sides.
فى التاريخ سنه خمسين تسعمايه	In square either كاشغر alone (26*d*) or with another unread word (26*e*). In semicircles ضرب - عدل - (?) ول - (?) بس

Two of the coins show a square counter-struck die (fig. 26*d*), with كاشغر on it.

The two words after *'adl* probably contain a name which I am unable to identify. At the time of the date of the coin several dynasties were contending for the possession of Kāshghar, *e.g.*, the Bukhāra rulers, the Mongol Khāns and the Doughlat Amīrs.

(2) Sulaimān Khaqān (?); 52 coins, copper; not in the *British Museum Catalogue;* with neither mint nor date; weight 26–116 grs., average 60 grs.; size 1–1·4″. From M. 2, M. 3, M. 4, M. 6, G. 5, G. 7, G. 10. Two varieties, as follows:

First Variety.

37 coins. Plate I, figs. 32–35.

Obverse.	Reverse.
Within two concentric circles with dots between them.	Octagonal area within a circle, with *fleur de lys* in the segments.
لا اله الا	اله (*sic*)
الله وحده	المستعصم
لا شريك له	سليمان (?) قدر
محمد رسول	كعماح (?)
الله	خاقان

Second Variety.

15 coins. Plate I, fig. 31.

Obverse.	Reverse.
The same as 1st var.	Area as on obv. Legend as on 1st variety.

(3) Masa'ūd (?); 17 coins, copper; not in *British Museum Catalogue;* mint and date lost with margin; weight 34–92 grs., average 70 grs.; size 0·0325–1·25″. From M. 2, G. 7. Plate II, fig. 26 and 30.

Obverse.	Reverse.
Area in double-lined circle.	Area in double-lined circle.
لا اله الا	(?) صما در
الله محمد	مسعود
رسول الله	(?) الحوا له
Inscribed margin nearly obliterated, only امير ... المظفر visible.	Margin, inscribed with date, nearly obliterated, apparently 977 in words.

(4) Six coins; copper; similar to No. 2. Not read.

(5) Ten coins; copper, of 8 different kinds; unread; five of them shown in Plates I, 7 and 23, II, 24, III, 13 and 14. Two from G. 4.

(6) Two coins; silver; in very indifferent condition; unread; apparently Mongol issues. Weight 30 and 21 grs., size 0·9″ and 0·83″. From M. 2.

(7) One coin; gold; mint and date lost with margin; weight 75 grs.; size 0·83″. Plate III, 16.

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Obverse.	Reverse.
Circular area.	Circular area.
لا الله الا	لا الله الا
الله وحده	الله محمد
لا شريك له	رسول الله
Inscribed margin, almost entirely obliterated and illegible.	Margin inscribed with date, almost entirely obliterated, only سنه visible.

(*i*) *Line of Shaibān.*

Iskandar; 1 coin, silver, with a loop for suspension; apparently similar to *British Museum Catalogue*, Vol. VII, Nos. 135 and 145; mint and date obliterated (reign **1560–1583 A.D.**); weight 62 grs., size 1·25″. Plate III, 12.

Obverse.	Reverse.
Square area.	Eight-foil area with two five-rayed stars.
لا اله الا الله	خان ☆
محمد	اسک بها...
رسول الله	ند ☆...
Margin nearly obliterated, only [المو] منين at bottom visible.	Margin entirely obliterated.

VIII. Modern Turkī Coins.

(18th and 19th centuries).

There are altogether 18 of these coins which fall into the following three classes.

(*a*) *Khāns of Khoqand.*

Apparently Shāh Rukh II; 1 coin, copper; mint Khoqand; date lost, but should be 1184 Ḥ. (=**1770 A.D.**); not in *British Museum Catalogue*; weight 58 grs.; size 0·66″. Plate I, fig. 28.

Obverse.	Reverse.
Double-lined square area across another double-lined square, surrounded by arabesques.	Single-lined small cirular area within broad ornamental margin.
رح	خو
	قند
	ضرب

(b) Aṭāliq of Kāshghar.

Yaqūb Beg; 3 coins, copper; not in *British Museum Catalogue*; mint Kāshghar; date 1293 Ḥ. (**1876 A.D.**); weight 51–58 grs., size 0·625″. Plate I, fig. 27.

Obverse.		Reverse.
خان	خان	کا
۱۲۹۳ or	۱۲۹	شغر
عبد	عبد	ضرب
	۳	
العزیز	العزیز	

Both areas within a double-lined circle, surrounded by a circle of dots.

(c) Coins of Yārqand.

There are 14 of these coins. They are heart-shaped, and their legends are counter-sunk. There are three varieties, differing by the obverse legends; the reverse legend of all (see Pl. II, 28, first figure on the left) is ضرب یارقند or mint Yārqand (or possibly یارکند Yārkand). There is no date. Weight 107–132 grs.; size 0·75 × 0·5625″. The obverse legends have not been read; two of them are shown in Plate II, 28; the third in Plate III, 17. One of them (Pl. II, 28, on extreme right) is, by Munshī Aḥmad Dīn, doubtfully read ضونگدائی خان. This particular variety is the commonest. From M. 2, 3, 6, 9; G. 7, 10.

IX. Modern Indian Coins.

The total of these coins is 59. They are of a very great variety, as follows.

(a) British Coins.

(1) East India Company; Sumātra; 1 coin, copper; obv. Cock; rev. native legend, with date 1247 Ḥ. (=**1831 A.D.**). See *Indian Museum Catalogue*, No. 12083, in Vol. II, p. 133.

(2) One $\frac{1}{12}$ Anna piece of **1889**. Copper. Obverse: *Victoria Empress.*

(b) Native States.

(1) Bhūj; 1 coin, copper; weight 52 grs., size 0·6″. Obv. in Nāgarī, round margin, *Çrī Khegār-jī Mirjā Mahārāo*, in centre trident, with *1938* (Samvat) below it (=**1882 A.D.**). Rev., in Persian, *ẓarb Bhūj, Victoria Qaiṣar-i-Hind*, in centre *sanah 1882* (A.D.), with Rājpūt dagger below it. Plate II, fig. 31.

(2) Bhopal; 1 coin, copper, $\frac{1}{4}$ anna; mint Bhopal; date 1277 Ḥ. (=**1860 A.D.**). See *Journal, Asiatic Society of Bengal*, Vol. LXVI, p. 270, Pl. XXXIII, fig. 57.

(3) Orchā; 1 coin; silver; 1 Rupee; mint Ūrchā; date 1211 Ḥ. (=1796 A.D.). See *Journal, Asiatic Society of Bengal*, Vol. LXVI, p. 267, Plate XXXII, fig. 29.

(4) Sikh State; 10 coins, of different varieties, all copper:

(*a*) 2 coins; obv., star; rev., legend, date *1894 Samvat* (=1838 A.D.); mint-mark, leaf. Plate II, fig. 29. As in *Journal, Asiatic Society of Bengal*, Vol. L, Plate IX, 68 (p. 90).

(*b*) 2 coins; obv., mint Amritsar, with mark of leaf; rev., Gurmukhī legend, and mark of sword.

(*c*) 1 coin; with mint-mark of leaf on reverse; as in *ibidem*, Plate VIII, 53, but in very indifferent condition; weight 122 grs.; size 0·83″.

(*d*) 2 coins; legends in Persian characters; obv., mint-mark, leaf within س of *jalūs*; rev., *ẓarb*; but both mint and date lost; weight 188 and 86·5 grs.; size 0·916″ and 0·75″.

(*e*) 1 coin, with Gurmukhī legends, similar to *ibidem*, Plate VII, 52. Weight 159·5 grs.; size 0·916″.

(*f*) 2 coins; obv., mint-mark leaf, and mint on one *khiṭah Kashmīr*, on the other *Jammū*; rev., legend Nānak Shāh with a leaf-ornament; weight 209·5 and 121·5 grs.; size 0·9″ and 0·8″.

(5) Nepal; 1 coin; a modern paisā of the present reign; date illegible.

(6) Jammū; 1 coin; weight 90 grs., size 0·7″; obv., Nāgarī legend; rev., Persian legend with date 1937 Sam. (=1880 A.D.).

(7) Kashmīr; 6 coins of two sizes, all extensively clipped, with Nāgarī on obverse and Persian on reverse, and leaf and sword as mint-marks:

(*a*) large, 1 coin, size 0·75″; weight 84·5 grs.; date 194* Sam. (=188* A.D.).

(*b*) small, 5 coins; size 0·6–0·7″; weight 47–48 grs.; dates 1938, 1939, 1941 Sam. (=1882, 1883, 1885 A.D.).

(8) Afghan; 6 coins, of different varieties; all copper:

(*a*) 3 coins, of Timūr Shāh Durrānī, ordinary Persian legends on both sides; obv., name and regnal year 12; rev., mint Kashmīr, date 118* Ḥ. (=177* A.D.); weight 230–278 grs.; size 0·8–0·9375″.

(*b*) 2 coins; apparently also of Timūr Shāh, but name lost, date of one 1165 Ḥ; rev., of one *ẓarb Kashmīr*, of the other, *khiṭah Kashmīr*, date lost; weight 119 and 130 grs.; size 0·75″ and 0·625″, but much clipped.

(*c*) 1 coin, ascription uncertain; obv., curved sword in ornamental ellipse; rev., *ẓarb Kashmir sanah 2* (?); weight 86 grs.; size 0·9″.

(9) Unidentified coins:

(*a*) large; 6 copper; 3 square, 3 round; with most fragmentary legends; weight 169·5–83 grs.; size 0·7–0·66″.

(*b*) small; 24 copper, all round, with most fragmentary legends; weight 46·5–4 grs.; size 0·333–0·5625″.

X. Modern European.

A Russian copper coin; got from the house of a Khotan merchant; obv., Imperial arms, rev., Imperial monogram within laurel crown, and date **1758 A.D.**; weight 802 grs., size 1·66″. Plate II, fig. 32.

X. Seals, Intaglios, Cameos, Etc.

(Plate III.)

The total number of these objects in the collection is sixty-five. They are of a great variety, in point of material, size, shape, form, and engravement. There are also ten unfinished pieces (all of stone) which had clearly been cut to make seals, but which bear no engraving of any kind. Most of these objects come from the Takla Makan desert, and belong to M. 2, M. 3, M. 4, M. 6, M. 9, G. 7 and G. 10. A few, belonging to G. 4, come from Western Turkestan.

With regard to material, there are of

brass or copper, bronze ...	...	37 specimens,
stone or glass, or ivory ...	...	28 „
Total	...	65 „

In size, they vary very widely; from 1·25″ to 0·25″ (Pl. III, fig. 21) in length.

In shape, there are the following varieties:—

Square or nearly so	...	22 specimens	
Oblong ...	...	3 „	(Pl. III, 19, 23, 39)
Triangular ...	...	1 „	(Pl. III, 68)
Quaterfoil ...	...	2 „	(Pl. III, 71)
Round or nearly so	...	23 „	
Elliptical ...	...	14 „	
Fanciful ...	...	1 „	(Pl. III, 80)
Total	...	66 „	

With regard to form, among the seals there are three made in the form of the ordinary signet-ring, to be worn on the finger. One of them is complete (Pl. III, 27 and Pl. XIX, 3); in the case of the other, two portions of the ring are missing. All three are of brass, and belong to M. 2. There are also five pieces, all of stone, which are cut in the form of a signet-ring, but their ring-portion is solid, with a hole drilled through it, in order to be worn on a string (Plate III, 62 and Plate XIX, 2). All these solid rings belong to G. 4, and probably came from Western Turkestan. The usual form of the seal, however, is a thin, flat plate, to the back of which is attached a small perforated peg for the passage of the string on which it is worn (Plate XIX, 4). All the seals of this kind are from the Takla Makan desert. They are also all of brass or copper, except one (Pl. III, fig. 29) which is made of steatite. One seal, of bronze, is furnished with two flaps (Pl. III, fig. 22 and Pl. XIX, 6).

Among the intaglios, there are two with a high, conical back (Plate III, 63 and Plate XIX, 7). They are both of glass, and came from the Takla Makan desert. All the rest are flat pieces of stone or glass, of the usual form, with a rounded or planed back.

Two of the objects (Pl. III, 65 and 73 and Pl. XIX, 8) appear to have merely served as ornaments, as they are provided with the remains of what seems to have been a nail. These are from the Takla Makan.

One object (Plate III, 23 and Plate XIX, 5) seems to be one of a set of dice used in divination. This, also, comes from the Takla Makan desert.

With reference to the matter engraved, it consists either of some writing, or some figure, mostly human or animal, or some ornamental design. Particulars, so far as definable, will be found in the following detailed description. The figures on the Plate are all full size.

Plate III, No. 18. Round intaglio of black glass †[43] engraved with Arabic characters, apparently *'afiyat Nādir* or "Success of Nādir." From G. 4.

No. 19. Oblong flat brass seal, with perforated peg; face engraved with what looks like writing in Persian characters (.... سيد). From M. 2.

No. 20. Obverse and reverse of a square amulet, of ivory;*[43] thickness $\frac{1}{7}$th of an inch, through which runs a fine string-hole; both

[43] For the identifications marked * and † I am indebted to the kindness of Mr. C. L. Griesbach, C.I.E., and Dr. Fritz von Nötling respectively, of the Geological Survey of India. Mr. Griesbach informs me (19th January, 1899), that "the stones might all have come from Badakshān or Bokhara. Lapis lazuli comes certainly from Badakshan, and spinel is found in Shignan and other places on the upper Oxus, also at Tagdallak east of Kabul."

faces engraved with what looks like writing. From the Takla Makan; consignment unknown.

No. 21. Minute lozenge-shaped intaglio of bronze, engraved with minute writing, apparently Arabic, unread. From G. 10.

No. 22. Square bronze seal; back furnished with two flaps, apparently for fixing to a handle (Pl. XIX, 6); face engraved with what seems to be writing. From M. 3.

No. 23. (Pl. XIX, 5). An oblong piece of brass, with four equal sides measuring $\frac{9}{16} \times \frac{9}{16}$ inches, the ends accordingly being $\frac{1}{8}$th of an inch square; perforated right along its long axis, and bearing engravements on all its four long sides. One side shows a dot; the side next to it has two strokes; these would seem to be intended for the numbers 1 and 2. On the other two sides one would expect the numeral signs for 3 and 4; and so they may be; but they are very indistinct, and, curiously enough, seem to suggest human standing figures: that on the third side being a long-robed woman with shield and spear; that on the fourth side, a man standing to the left before a fire altar, as on Kanishka's coins. But these resemblances may be deceptive, the engravements being excessively corroded. The piece is probably one of a set of dice, such as are still used in the present day for purposes of divination. See the remarks below.

No. 24. Elliptical intaglio; Grecian; engraved with nude figure of a man standing to front, with his wrists behind his back, bound to a pillar (Prometheus ?).

No. 25. Elliptical intaglio; Indian; engraved with bust of a woman, showing ancient Indian fashion of hair-dress.

No. 26. Elliptical intaglio; Grecian; engraved with seated draped figure of woman to left; perhaps Tyche with cornucopiæ in left and sceptre in right hand.

No. 24 to 26 were found "near Khotan," and are those "three pieces of yellow crystal of an oval shape" mentioned on p. xxxii of the Introduction. Mr. Macartney only sent me impressions taken in sealing-wax. From these plaster-casts were made by me for the photographic plate. This accounts for the want of clearness in the figures.

No. 27. Elliptical signet-ring of brass. (Plate XIX, 3). Engravement too much worn to be clearly recognised; apparently a woman seated to left on a wicker-stool. From M. 2.

No. 28. Obverse and reverse of a square amulet, made of serpentine*; thickness $\frac{1}{8}$th of an inch, perforated with a string-hole. Obv., centaur to right, holding some object in each uplifted hand; below a four-rayed star, like ×. Rev., lion to right, with open mouth threatening a man in attitude of supplication before him; above tail three dots. From M. 3.

No. 29. Round seal or button, of steatite *, with perforated prominence on back, engraved with rude radiate sun-face. From M. 3.

No. 30. Round intaglio of red cornelian, engraved with the head of a woman. From G. 10.

No. 31. Round intaglio of black glass †, engraved with the head of a man (Parthian ?). From G. 4.

No. 32. Elliptical intaglio of red cornelian; Grecian; Pallas to right, in long robe and helmet with spear and shield. From G. 4.

No. 33. Similar to No. 32. Apparently draped female figure to left. Original gone astray.

No. 34. Square flat brass seal, with perforated peg, showing kneeling figure of a man to left, with uplifted right arm, before some small indistinct object (fire-worshiper ?). From M. 2, found at Aq Sapīl.

No. 35. Square brass flat seal, with broken, perforated peg at back, engraved with two men, standing to front, but facing one another, both in the same attitude, left arm uplifted, right arm suspended From M. 2, found apparently in Kök Gumbaz.

No. 36. Elliptical intaglio of very thin brown glass, convex, about one-half broken off and missing. Engravement, nude figure, apparently a monkey, with feathered helmet, holding up a branch in left hand. From G. 4.

No. 37. Round intaglio, of blue glass *; showing draped (female ?) figure, seated cross-legged to front, with uplifted arms, holding in left hand a wreath (or sun ?), in right hand a crescent. Posture similar to that of king or deity on Indo-Scythian and Gupta coins; compare *Ariana Antiqua*, Plate, xviii, 4, 5; *British Museum Catalogue*, Pl. xxix, 4. From M. 3.

No. 38. Elliptical intaglio, of lapis lazuli *, showing head of a bird to right, wearing helmet or cap. From G. 10.

No. 39. Oblong intaglio of sardonix *, very deep red, with whitish surface on the engraved side; showing nude dancing girl, wearing very heavy girdle and anklets, standing to right, and presenting some lengthy object in both forth-stretched hands, in posture similar to soldier presenting arms. From G. 10.

No. 40. Round intaglio, of glass or obsidian,* showing a goat or long-horned gazelle, walking to right. From G. 10.

No. 41. Square flat bronze seal, with perforated peg, showing a hare sitting to right. From M. 2.

No. 42. Square flat brass seal, with perforated peg (broken), showing a crude calf, walking to left. Similar to No. 43. From M. 2, found at Aq Sapīl.

No. 43. Round brass seal, with perforated peg, showing a sheep or goat walking to right. From M. 9.

No. 44. Square brass signet-ring (portion of ring missing), engraved with large-horned sheep (ovis Poli?) walking to left. From the Takla Makan desert; consignment unknown.

No. 45. Round intaglio of blackish agate with whitish surface on the engraved side (similar to No. 39), showing a deer running to right. From G. 10.

No. 46. Round solid perforated seal-ring, of whitish agate,† showing a crudely made hare (?), running to right. From G. 4.

No. 47. Round intaglio, of spinel *, showing a hare running to right. From G. 10.

No. 48. Square flat brass seal, with perforated peg (broken), showing head of a bull *en face*. From M. 2, found at Aq Sapīl.

No. 49. Round intaglio, of sardonix *, very deep red, with whitish surface on the engraved side (similar to No. 39), showing a cow standing to right, with suckling calf. From G. 10.

No. 50. Round flat brass seal (much worn), with perforated peg (broken); showing a sheep, walking to left, very crude. From M. 6.

No. 51. Round intaglio of red cornelian; showing a horse, bridled and belted, jumping to left. From G. 4.

No 52. Round flat brass seal, with perforated peg, showing an elephant standing to left. From M. 2, found at Aq Sapīl.

No. 53. Square flat brass seal, with perforated peg (broken), showing an elephant, walking to left, harnessed with drapings and carrying a Buddhist relic casket. From M. 2, found at Aq Sapīl.

No. 54. Elliptical solid perforated seal-ring, of whitish brown-veined agate†; showing Brahmanī (humped) bull, standing to right, within chaplet of astragals. From G. 4.

No. 55. Round flat brass seal (much worn), with perforated peg (broken), showing a lion, walking to left. From M. 2.

No. 56. Round intaglio, of red cornelian, showing a lion walking to right. From G. 10.

No. 57. Elliptical intaglio, of lapis lazuli *, showing Pegasus walking to right; two unread letters (Pahlavi?) above hind-quarters. From M. 3.

No. 58. Round brass seal (broken), with perforated peg, showing a goose walking to left. From M. 2.

No. 59. Round solid perforated seal-ring, of whitish agate,† showing parrot walking to right. From G. 4.

No. 60. Square flat brass seal, with perforated peg (broken)

showing a roaring lion, seated to right, similar to No. 61, but without raised paw. From G. 7.

No. 61. Square flat brass seal, with perforated peg, showing a lion or cat sitting to right, with open mouth and uplifted left paw. From M. 2, found at Aq Sapīl. Another, but smaller specimen, from G. 7, has the paw not uplifted.

No. 62. Round solid perforated seal-ring, made of whitish agate,† showing a scorpion, walking to right, with raised sting. From G. 4.

No. 63. (Pl. XIX, 7). Conical intaglio, of green glass (much corroded); engravement indistinct, apparently a locust, flying to right. From M. 4.

No. 64. Round flat brass seal (broken and much corroded), with perforated peg, showing two birds (bulbul?) facing each other and fighting. From M. 2, found at Aq Sapīl.

No. 65. Round flat ornament of copper, with ring attached to rim, for wearing. In the centre, remains of a nail, showing that originally there was something attached to its back. From M. 9.

No. 66. (Plate XIX, 8). Brass nail with round ornamental head, formed like a mushroom.

No. 67. Round flat brass seal, with perforated peg (broken), showing radiate sun-face, or perhaps wheel.

No. 68. Triangular flat brass seal, with perforated peg, showing a scorpion, walking to right. From M. 6.

No. 69. Elliptical intaglio of red cornelian, engraved with an uncertain design (pair of cymbals?) From G. 4.

No. 70. Square flat brass seal, with perforated peg (broken), showing an ornamental design. From M. 6.

No. 71. Quarterfoil flat brass seal, with perforated peg, and original piece of thread on which it was worn. Engraved with an ornamental design. From G. 10. Another specimen was in M. 2. See No. 79.

No. 72. Square brass signet-ring (larger portion of ring missing), showing an ornamental design. From the Takla Makan; consignment unknown.

No. 73. Round intaglio of whitish glass,† engraved on one side with the figure of two crossed swords or arrows, on the other, with some kind of faintly incised writing. From G. 4.

No. 74. Obverse and reverse of a round amulet, of serpentine;* thickness, $\frac{1}{8}$th of an inch, perforated with a fine string-hole. From the Takla Makan; consignment unknown.

No. 75. Elliptical solid perforated seal-ring, of Bowenite,† engraved with fire-altar, as on Sassanide coins. From G. 4.

No. 76. Square flat seal of brass, with perforated peg, engraved with an ornamental design. From M. 2, found at Aq Sapil.

No. 77. Square flat seal of copper, bearing four square ornamental designs, two of them being different forms of the Svastika. From M. 6.

No. 78. Square flat copper seal, with perforated peg, engraved with an ornamental design. From M. 6.

No. 79. Square flat seal of brass, with perforated peg, engraved with an ornamental quaterfoil design. From M. 2, found at Aq Sapil. Another specimen, of the same size, was in M. 9. See No. 71.

No. 80. Flat copper seal, consisting of a square surmounted with a tridental crown, and furnished with a perforated peg. Bearing ornamental designs, that on the square being the same as on No. 79. From M. 6.

No. 81. (Plate XIX, 11). Elliptical intaglio, perhaps of felsite*; Grecian; showing a draped and helmeted figure, sitting on a stool (?), holding a bird (?) on his outstretched right hand. From G. 4.

There is one cameo in the collection. See Plate XIX, 9. From G. 10. It shows the helmeted head of a young man, of Grecian design.

Among the gems, shown on p. 779 of Dr. Sven Hedin's *Through Asia*, and obtained by him in Khotan, there are several which are strikingly like some in the British collection Thus the second in his first line of facsimiles resembles our No. 30. There are three other similar ones on that page, but they differ in having a ribbon round the neck of the figure shown on it. There is also there one gem strikingly like our No. 29. The deer, hare, and large-horned sheep are also found on several of them.

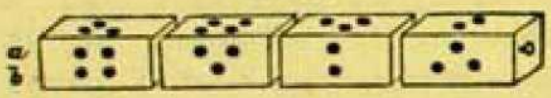
But what is more noteworthy is that exactly similar seals and intaglios have been discovered in the ancient stūpas of Afghanistan. Samples of these are shown in Wilson's *Ariana Antiqua*, Plates i, iii and iv. Thus figs. 7–10 on Pl. iv, show two square flat seals with perforated peg, made of iron or brass. Plate i, fig. 8, Pl. iii, fig. 7 and Pl. iv, figs. 10, 11 are similar cornelian intaglios. The signet-rings, shown on Pl. i, 5, and Pl. iii, 6, though similar in shape to our Nos. 27, 44, 72, differ in being more costly, being of gold with inlaid cornelians, while those in our collection are made entirely of brass or copper.

I may also note the evidences afforded by these objects to the prevalence of Grecian and Buddhist culture in ancient Khotan. Nos. 24, 26, 32, 33 on Pl. III and No. 11 on Pl. XIX are distinctly Grecian; so are the centaur on Pl. III, No. 28, and the pegasus on No. 57. Distinctly Indian are the Brāhmanī bull on No. 54, and the elephant on Nos. 52, 53. Distinctly Buddhist are the Svastika on

No. 77, and the relic-carrying elephant on No. 53. Old Persian (Zoroastrian) are the fire-altar on No. 75, and the fire-worshipper (?) on No. 34.

With reference to No. 23, I may explain that there is a certain system of divination, well-known all over Northern India. It is practised, I believe, only by men of the extreme North-West, "Kashmiris" as they are commonly called, who are, as a rule, Muhammadans. They use a double set of four brass dice, strung on two short iron rods, round which they freely revolve; four dice on each rod. The eight dice are all made exactly alike; being rectangular parallelopipeds (Pl. XIX, 5), with only four equal sides (not cubes), and marked, on the long oblong sides, with the numbers 2, 3 and 4, denoted by dots, in such a manner that 2 stands on the side opposite to 4, and 3 opposite to 3, as shown in the subjoined woodcut.

No. 10.



The short square sides, of course, which are perforated for the iron rod, bear no numbers; nor is the number *one* used. The dice look as if they were made of brass, but they are said to be of a special alloy of seven metals, consisting of brass, pewter, iron, lead, silver, gold, and copper. The operator throws the two strings of dice so that they fall parallel to each other, and then counts the dots in parallel lines; thus, lines *a* and *b* give 6 each, arranged as 2+2+1+1 and 2+1+1+2, or a combination of 12. Each of the two lines might give any number from 4 to 8, and between them a great variety of arrangements and combinations. From these variations the diviner makes his forecasts.[44] The object, described under No. 23 looks very much like one of such a set of dice, only that its faces are marked differently from what is the custom at the present time.

[44] A description of the alloy as well as of the *modus operandi* in divining with such dice will also be found in the "Third Report of Operations in Search of Sanskrit Manuscripts in the Bombay Circle, April 1884 to March 1886," by Professor Peterson, pp. 44–46, printed as an Extra-Number of the Journal of the Bombay Branch of the Royal Asiatic Society. Both the description and the sketch of the dice are not quite accurate.

Section II.—BLOCK PRINTS.

General Remarks.

The following is a summary of the Block-prints in the collection:

I.	First Set	comprising	8 books.
II.	Second Set	,,	6 ,,
III.	Third Set	,,	3 ,,
IV.	Fourth Set	,,	8 ,,
V.	Fifth Set	,,	8 ,,
VI.	Sixth Set	,,	3 ,,
VII.	Seventh Set	,,	6 ,,
VIII.	Eighth Set	,,	1 ,,
IX.	Ninth Set	,,	2 ,,
	Total	...	45 books.

Style of Binding.

With the exception of one, the block prints all alike resemble European books in their style of binding.[1] A sheet of paper is folded in the middle to form two leaves, with four pages. A number of such folded sheets or "forms" are then fastened together, along the line of the fold, to make up a book. For the purpose of fastening them, they are, as a rule, simply laid one upon the other; but there are three books, all belonging to the Third Set, in which they are not laid one upon the other and outside the other, but placed one within the other so that the entire book forms but one folded bundle. Occasionally also, as in No. I of the First Set, a double form is met with, made up of two folded sheets, placed one within the other and thus consisting of four leaves or eight pages. The fastening is done in three ways: either by thread (2), or by twists of paper (12), or by pegs of copper (30).[2] The last-mentioned method is the commonest: the relative frequency is indicated by

1 See also my Note on some Block-prints in the *Proceedings, Asiatic Society of Bengal*, for April 1898, p. 124.

2 I may add that Mr. C. Bendall informs me (in a letter dated the 1st October, 1897) that the British Museum possesses a book in which "the peg is of wood, not metal.'

the bracketed numbers. The pegs are applied like rivets, that is, their ends are bent over and beaten down fast; but before doing so, they are passed through thin pieces of copper, as a protection to the leaves. Sometimes (as in No. VII of the First Set, No. III of the Fifth Set and No. V of the Seventh Set) these guards are round ornamental pieces, resembling coins, as shown in fig. 3 of Plate IV; or they are elliptical (as in No. VIII of the First Set) or oblong (as in No. VI of the Seventh Set); but many of them (as in Nos. I and VII of the First Set, Nos I and III of the Fourth Set, No. III of the Fifth Set, and No. I of the Seventh Set) are evidently portions of a large ornamental circular plaque which had been cut into pieces; and in this case the pieces are very large, as shown in Plate IV, fig. 1. In two cases (in No. I of the Second Set, and in the book of the Eighth Set) the guards consist of two long slips of copper, extending the whole length of the book. The twists of paper are applied, like pieces of string, to form loops. The stitching with thread only occurs in two books, in No. II of the Third Set and in the book of the Ninth Set. As a rule the fastening is made in three separate places, by three nails, or three twists of paper, or three loops of thread. Twice, however, in No. III of the Fourth Set and in the book of the Ninth Set, four pegs and four threads respectively are used; and once, in No. II (Pōthī) of the First Set, only one peg. A fastening in two places is more frequent; four times (in No. VIII of the First Set, Nos. V and VI of the Fifth Set, and No. IV of the Seventh Set) only two pegs are used; and twice (in No. VII of the First and No. VIII of the Fifth Set) only two twists of paper. The three initial and the three final pages are as a rule left blank; and thus the first and the last leaves, being blank, serve as covers to the book. In one case (No. VIII of the Fifth Set) seven initial and seven final pages (*i.e.*, three leaves on each side) are left blank. The probable object of this arrangement is disclosed by No. II of the Second Set and No. I of the Fifth Set, in which four and two leaves respectively have been pasted together to form pasteboard covers at either end. The single exception above referred to is a *pōthī* (No. II of the First Set), that is, a book arranged in the Indian fashion. In this case, the whole collection of "forms" is placed between two pieces of wood, and held in position by riveting it with one copper peg, passed through the middle of one of the narrow sides, as shown in Plate VIII. The arrangement is exactly the same as in the case of a set of Indian copper-plates of a landgrant. The peg takes the place of the seal-ring of the grant, or of the string of a manuscript. The two ends of the peg are split in two, and the two splits are turned over right and left, after having been passed through the thin copper

The Pothi.

guard; thus the whole *pōthī* is kept firmly fixed. The two wooden covers are thick rough pieces ($8\frac{1}{2} \times 4\frac{3}{4} \times 1''$) of a very light kind of wood, the outside surfaces of which are not planed.

Size and shape.

In size and shape the block-prints vary greatly. Some are narrow oblongs, measuring from $9\frac{1}{2}$ to $14\frac{3}{4}$ by 4 to $4\frac{1}{4}$ inches; but mostly they are broad oblongs, the largest measuring $23\frac{1}{2} \times 13\frac{1}{2}''$, the smallest, $6\frac{3}{4} \times 4\frac{1}{4}''$. Their thickness, also, much varies, depending, of course, partly on the number of forms contained in them, partly on the thickness of their paper. The thickest is the pothī, its wooden covers alone measuring together two inches. Further details of measurements will be given with the following description of the several xylographs. In a few cases the corners are slightly rounded off: in one case this is done so much as to render the shape of the book eliptical; see fig. VIII in Woodcut No. 12. The edges of the leaves are frayed, as if the sheets had been cut with a blunted or notched instrument. Very exceptionally I have found the edge of a pair of leaves uncut. In these cases, when fastening the book, a folded sheet had been put in wrongly with the fold outside instead of inside. On the other hand, in five cases (First Set, Nos. IV and V, Fourth Set, Nos. III and VII, Seventh Set, No. V) I have found all the folds cut through, so that practically the book consists of separate leaves, instead of forms. This is also the case in No. VII of the Fifth Set, where, however, the leaves appear to have become separated by the wear and tear of the folds.

Paper.

The xylographs are all printed on paper. The paper appears to include, at least, three distinct classes. One class is a soft paper, thin, and of even texture, much like the white or whitish paper of the Weber and some of the Macartney Manuscripts, published by me in the Journal of the Asiatic Society of Bengal, Vols. LXII and LXVI, which is believed to be made of the bark of the laurel (Daphne). This class of paper is found only in the one book which constitutes the Eighth Set. It has a deep yellow colour, which is probably a tint artificially imparted. Another class of paper is only found in the book and the roll, comprised in the Ninth Set. This is an exceedingly thin, almost transparent, tough paper, of even texture, with a light yellowish tint, probably natural. In its present condition it has become somewhat brittle, from age. Except in colour, it reminds one of what, in the trade, is known as "parchment overland paper;" in fact, at first sight I thought it was very fine vellum, though on closer examination and washing, it at once revealed itself to be paper. The most common is a third class of paper, of a more or less uneven texture and thickness, the prevailing colour of which is a more or less dirty yellowish-brown

Four distinct varieties are observable. The first variety is a soft, thickish paper, to the touch resembling felt or cloth, of comparatively even texture and rather brighter yellowish-brown colour. It is found in nine books; *viz.*, Nos. I and II of the First Set, Nos. I, III, IV, V and VI of the Second Set, and Nos. II and III of the Third Set. The second and third varieties differ from the first variety only in being progressively thinner, of more uneven texture, and of darker colour. The third variety, indeed, is occasionally of an exceedingly flimsy make. The second variety is found in nineteen books; *viz.*, Nos. II, III, IV and V of the First Set, No. II of the Second Set, No. I of the Third Set, Nos. I, II, III, IV, VI and VII of the Fourth Set, Nos. I, II and VIII of the Fifth Set, and Nos. I, II, III and V of the Seventh Set. The third variety is found in five books; *viz.*, Nos. VII and VIII of the First Set, No. V of the Fourth Set, No. III of the Fifth Set, and No. VI of the Sixth Set. All these three varieties are comparatively soft papers, and in this respect differ from the fourth variety, which is a hard and stiffish paper, of middling thickness, and of very uneven make. This fourth variety much resembles, except in point of colour and age, the kind of paper which is still made in Khotan at the present day. It is found in nine books; *viz.*, No. VIII of the Fourth Set, Nos. IV, V, VI, VII of the Fifth Set, and Nos. I, II, III and IV of the Seventh Set. With the exception of one book, they all belong to M. 8; and the single exception belongs to M. 9. The three other varieties do not resemble the modern Khotanese paper, though it is probable that they all are of Khotanese manufacture, being probably made of the same material, and by the same or a similar system of preparation. I am disposed to believe that the four varieties of this class of paper represent four different periods and four successive degradations of Khotanese paper manufacture. The texture of the modern Khotanese paper is exceedingly coarse and uneven, its pulp having been prepared very roughly and spread very unevenly. When fresh, the paper has a creamy or greyish colour: the much darker colour of the corresponding paper of the block-prints is the effect of age. Regarding its material I have received two different statements. The Rev. Magnus Bäcklund, Swedish Missionary in Kashghar, who has visited Khotan, informs me in a letter, dated the 29th June, 1898, that "it is made of the bark of the willow, softened in lye, and then taken up and beaten between flat stones, which of course, cannot be made so well as to prevent small pieces of bark remaining here and there." According to Munshī Aḥmad Dīn, of the Kashghar Agency, in a note written for me on the 19th December, 1898, "the Khotan paper is a very coarse stuff, chiefly composed of silk waste." In the sequel these classes and varieties of

paper are referred to as I, II, III*a*, III*b*, III*c*, and III*d* respectively. The paper of the Pōthī (No. II of the First Set) I am doubtful in classifying, but it probably belongs to Class III*b*.

Block-printing.

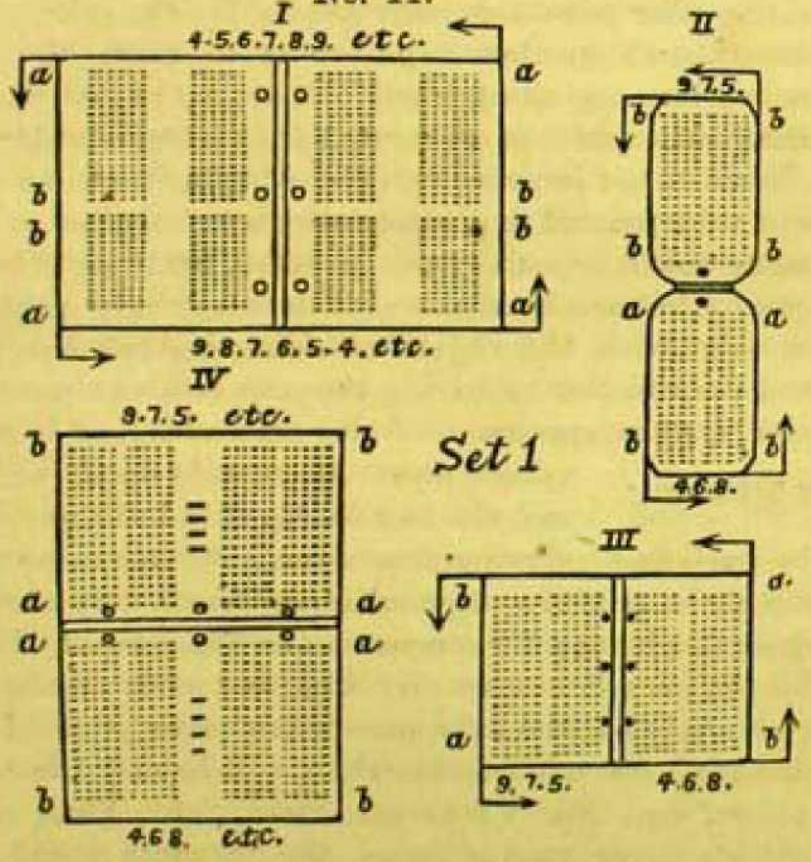
That these books were printed from blocks of type is apparent from the fact that the text is repeated over and over again, from page to page, the repetitions being facsimiles, as shown by measurements made by me (see below under the First Set). The type, cut on the block, was enclosed in a square of raised straight lines, and occasionally these inclosing lines are printed off along with the inclosed type; but as a rule they do not seem to have been inked, and only a few traces of them, here and there, are seen (as, *e.g.*, on Plates IX and X). The printing was not always carefully done; occasionally the blocks were inked too much, and the impressions are smudgy: at other times they were inked too little, and the impression is almost illegible. When the print is repeated on the same page, the impressions, for the sake of economy, were sometimes placed so close together as to cause the margins of the prints to run into one another and obliterate the letters. From the fact that sometimes one has to remove the rivets, in order to be able to read the whole of the impression, it is evident, that, as a rule, the sheets or pages were printed first before they were stitched or riveted into books. In some books, especially of the Fifth, Sixth and Seventh Sets, the paper appears to have been more or less strongly greased, before printing, possibly with the object of sizing it; but the process has sometimes had the effect of rendering the impressions almost illegible.

System of Printing.

A regular system appears to have been observed in printing the xylographs. As already explained, the first and the last leaves of a book were always left blank, for the purpose of serving as a cover. For the same reason, the exterior pages of the second and penultimate leaves were also left blank. The printing almost invariably commences on the interior of the second leaf (*i.e.*, the 4th page of the whole book), and stops on the interior of the penultimate leaf (*i.e.*, the ante-ante-penultimate page of the whole book). There are a few exceptions, which will be noted in the detailed description; see, *e.g.*, No. VI of the First Set. Thus supposing a book had six leaves or twelve pages, the imprints would commence on the fourth page and stop on the 9th page; pages 1, 2, 3 and 10, 11, 12 being blank. With regard to the arrangement of the imprints on the pages, the principle (to which there are only a very few exceptions) was that they were placed alternately in an upright and reversed position. Whence it follows that, in reading a book, one would at first, read consecutively, throughout the book, all the upright impressions;

next, turning the book right round, one would commence at the back of the book, and read consecutively, right through the book, all the reversed impressions, which, however, would now of course, stand upright towards the reader. The subjoined Woodcut No. 11 illustrates this system, and the various modifications in which it is applied.[3] The dotted lines in the diagrams signify the lines of type, and the letters *a* and *b* indicate the beginnings and endings respectively of the impressions of the text. In No. I, there are two impressions in each column, standing foot to foot; those in the upper halves of the pages standing upright, while those in the lower halves are reversed. In this book one would read, first, consecutively all the impressions in the upper halves of the pages, in regular order (4, 5, 6, 7, 8, 9, etc.), up to the end of the book. Next turning the book right round, in the direction of the arrows, and thus bringing the reversed impressions into an upright position, one

No. 11.



would read consecutively all the impressions (of the formerly lower half-pages) from the back to the beginning of the book, in regular order (etc., 9, 8, 7, 6, 5, 4). The same system, in another, slightly modified form,

[3] The Roman numbers in this and the following Woodcuts refer to the books of the First Set. The diagrams are drawn to the scale of 1 inch in the woodcut to 12 inches of the original.

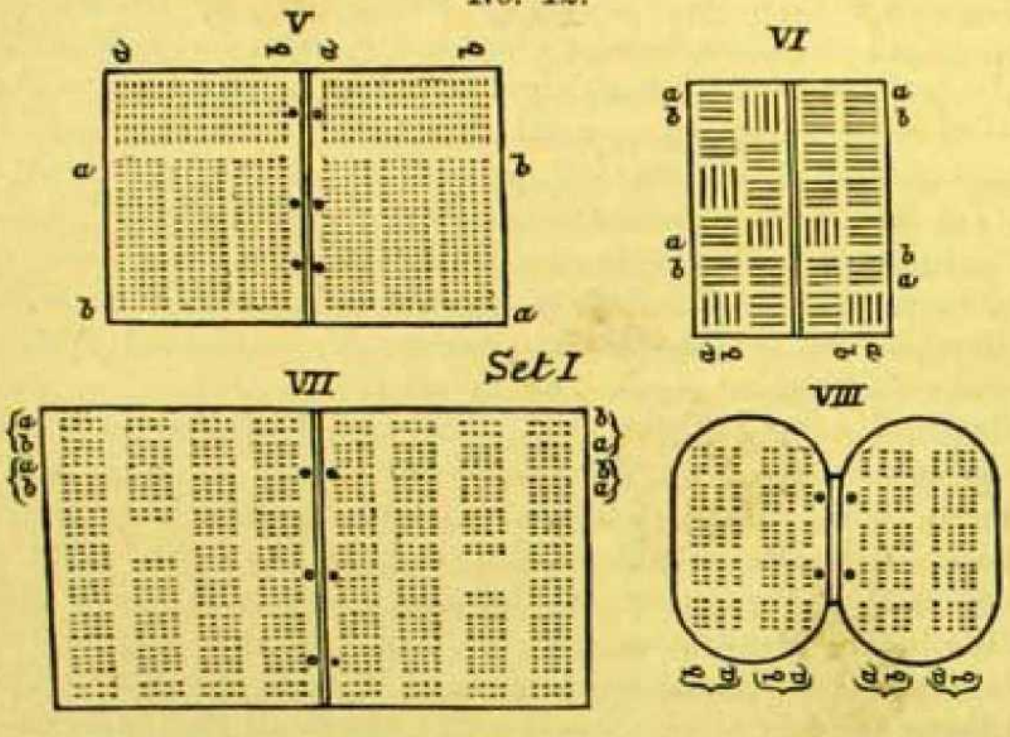
is applied in Nos. II, III and IV. In these books the impressions stand upright on pages 4, 6, 8, etc., but reversed on pages 5, 7, 9, etc. In reading any of these three books, one would begin by reading consecutively all the even-numbered pages (4, 6, 8, etc.), throughout the book. Next, one would turn the book right round, as indicated by the arrows, and thus bring the imprints, which hitherto had stood reversed, into an upright position; and now, commencing at what was the end of the book, one would read consecutively all the odd-numbered pages (etc., 9, 7, 5) up to the original beginning of the book. The same system, again, in a third modified form, may best be seen in book No. II of the Seventh Set. Here the impressions do not stand upright and reversed on alternate pages, but in alternate columns, as shown in the diagram on page 55. Thus they stand upright in columns 1 and 3, but reversed in columns 2 and 4. In reading one would commence with all the left-hand columns consecutively throughout the book; then one would proceed to turn the book right round, and now read all the impressions (of the former right-hand columns) from the back to the beginning of the book. In this way the reading of the entire book would be completed. To this principle of arrangement there are only a few exceptions, in which all the impressions are placed upright (or in the same direction) throughout the book, so that the book can be read right through, from page to page, without turning it right round. This is the case in books No. IV of the Second Set, Nos. IV, V and VI of the Fourth Set, No. II of the Fifth Set, No. II of the Sixth Set, and No. IV of the Seventh Set.

Want of System.

There is, however, a certain number of books, in which the orderly arrangement of imprints, above explained, is not observed. In some of these books, indeed, no system of printing whatever can be discerned. The impressions appear to be placed promiscuously; the only apparent object being to crowd as many impressions into a page as it may, by any device, be made to hold. This may be seen from figs. V and VI of the subjoined woodcut No. 12. Two conspicuous examples of this kind of book are No. VI of the First Set, and No. III of the Sixth Set. With such an arrangement, obviously, no intelligent and orderly reading of the book is possible. Beside these there are some other books in which the absence of all orderly arrangement is not quite so conspicuous. In these the imprints are orderly placed on each page taken by itself; that is, on some pages they are all placed upright, on others, all are placed reversed; but these differing pages do not follow one another in any system. In any pair of pages one may meet with any of the four possible arrangements: upright-upright, upright-reversed, reversed-

reversed, and reversed-upright. All these four arrangements occur with

No. 12.



almost equal frequency. A good example of this kind is book No. V of the Seventh Set. In such books, too, any orderly reading is out of the question.

Object and Use of the Block-print Books.

If it were certain what the object of these books was—whether they were, or were not, intended for reading,—the presence or absence of systematic arrangement of the imprints might afford a good test to determine the genuineness, or otherwise, of the books. So long as their purport remains undeciphered, their object must be a matter of speculation; but the fact that they contain nothing but interminable repetitions of the same text seems clearly to indicate that in these books we are dealing with set formulas—creeds, prayers, or incantations, or whatever one may call them,—possibly or probably Buddhistic,—the virtue of which was supposed to be in proportion to the frequency of their repetitions. The mode of this repetition, however, need not necessarily have been an intelligent one: it might have been quite mechanical, like that of the prayer-wheel or the prayer-flag. Turning the leaves of a book would serve the purpose of the devotee quite as well as turning a wheel, or letting the flags be moved by the breeze. If this were the object of the books, it is evident that the order or want of order in the arrangement of the formulas would be altogether immaterial, provided the page is well covered with them. In any case, whether the leaves were intended to be read, or merely to be turned,

it is plain that there was no need of numbering them, seeing that, the contents being merely a repetition of a set formula, one might use the leaves in any order. As a matter of fact, none of these books have their leaves or pages numbered. The want of pagination is to be regretted, as the numbers might have served as a clue to distinguishing top and bottom of the page, and thus of determining the beginning and end of the formula imprinted on it. The large number of the block-prints and the multiplicity of the scripts contained in them open up another problem as to their object. It would seem that there existed somewhere in the Takla Makan a kind of library, or store of books, the locality of which seems to have been discovered by native treasure seekers, being perhaps an ancient monastery. Moreover the existence, among the block-prints, of collective books (such as comprised in the Sixth Set), which contain impressions of texts in several scripts, seems to show that in that place there must have been a collection of all the different kinds of blocks; and that the place, in fact, was a sort of printing establishment, for the production and distribution of books of (religious) formulas among communities or in localities, using different scripts, and perhaps speaking different languages or dialects.

Want of Pagination.

Prima facie, there are not less than nine different scripts employed in the block-prints. Accordingly I have distributed them into nine sets. It is not improbable that hereafter it may be shown that some of the scripts are allied to, if not identical with, one another; I mean in this way that one may be the kaligraphic counterpart of a current script. This may be the case, perhaps, with the two scripts shown on Plate V, for they agree in their number of lines. I believe also to have noticed, here and there, the same symbol, in slightly modified forms, in different scripts. In order to arrive at any definite and satisfactory conclusion on this head, a more detailed and minute examination is necessary, for which the time allowed me at present does not suffice, but for which I hope to have leisure after my retirement from India. With my present information, it appears to me likely that the scripts of the First and Second Sets, those of the Third and Fifth Sets, and those of the Fourth and Seventh Sets are pairs the members of which have some more intimate connection with each other. Further, it seems to me possible that the juxtaposition of several formulas in the collective books of the Sixth Set and elsewhere may lead to the recognition of some kind of identity obtaining among them with reference to their purport. As to the language, or perhaps the number of languages, hid in these scripts

Number and Identity of Scripts and Formulas.

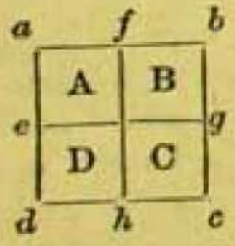
and formulas, of course, it is impossible to venture to express any opinion, before some advance has been made in their decipherment.

Age and Conservation of the Block-prints.

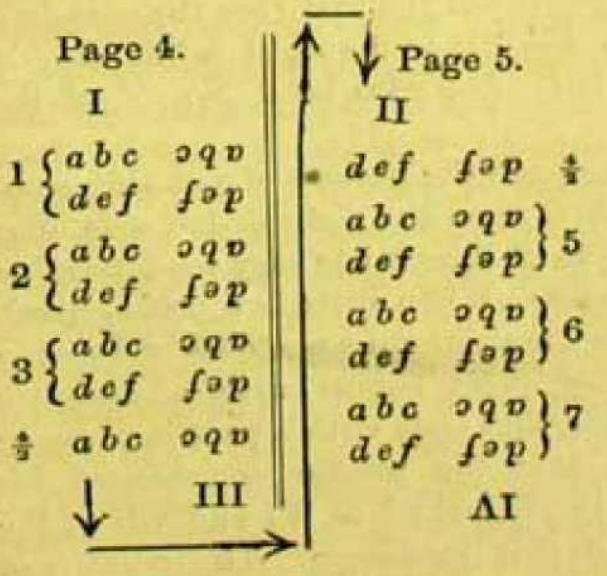
Some of the block-prints are furnished with guards which show in their ornaments a curious resemblance to a certain coin of one of the Urtuqīs of Māridīn. They may be seen on Plate IV, figs. 1–9; the coin also on Plate I, fig. 20. The coin is ascribed to 1232 A. D., see the Section on Coins, p. 31. If the resemblance is not deceptive, it will fix the upper date of the block-prints in question. They could not be older than the middle of the 13th century A.D. There is reason to believe, however, that some of the block-prints must be several centuries older. That there is nothing in the physical conditions of Eastern Turkistan to render such a long period of conservation impossible, I have already remarked in the Introduction, p. xxviii.

Orientation of the Texts and Scripts.

The question of what is top and bottom, right and left, of the text, or of the formulas composing the text, is a puzzling one. The determination of it would help to determine the further question of how the script of the texts is to be read, whether from the left to the right in the European fashion, or from the right to the left as in Semitic writing, or from top to bottom as in Chinese. I have not, as yet, come across any absolutely decisive evidence. In some books regularly recurring partial impressions of formulas are met with,—cases in which only a portion (one-half or one-third) of the formula, divided either horizontally or vertically or both ways, is met with. Want of sufficient space on the page is always seen to be the reason for such partial impressions. In such cases it may very plausibly be argued that, when the printer had not sufficient space to print the whole formula, he would preferably print the initial portion of it on the available space. On this assumption we should have an indication of what is the beginning or the end of a formula. Thus let *a b c d* in the marginal diagram represent such a complete formula, in which the lines of writing run parallel with *a b* (as *e.g.* on Plate XII). If *a b g e*, that is, the formula horizontally divided, be the only portion printed, this may indicate that it is the initial portion of the formula. Similarly if *a f h d*, or the formula vertically divided, were only printed, this would show that portion to be the initial one. If further, both portions *a b g e* and *a f h d* were found regularly printed in certain delimited places, we should know for certain that the portion A contains the beginning of the formula, and that its reading must commence in the corner *a*, and proceed from *a* to *b*. It would still



remain uncertain whether the script run from the left (*a*) to the right (*b*) in European fashion, or from the top (*a*) to the bottom (*b*) in Chinese fashion. In other words, *a* might be either the upper left-hand or the upper right-hand corner of the formula. Similarly the beginning of a formula might happen to be found to lie in the portion B, in which case the script would run from the right to the left, in Semitic fashion. The two alternative possibilities, here explained, are those actually observed by me in the case of the formulas of the Fourth and Seventh and the formula of the Fifth Set respectively. The former seem to run from the left to the right, the latter from the right to the left. The weak point in this argument is not so much the fact that occasionally the opposite portions (*e g c d* and *f b c h*) of the formula are found printed; for this might be due to a careless misprint; and the detailed description of the various sets will show that misprints are by no means uncommon. A far more serious difficulty is the uncertainty as to whether the books were intended for reading at all. If they were not intended for reading, but for some kind of mechanical use, the circumstance of what particular portion of the formula was printed in order to represent the whole of it is obviously of no moment. But on the other hand, the regularity in printing a certain definite portion points to method and design, such as one would not expect in the case of printing for mere mechanical use. In the latter case one would expect the portions AB, AD, BC, CD to occur promiscuously. It seems, no doubt, certain that the disorderly books, above mentioned, such as No. VI of the First Set, cannot have been intended for intelligent reading, but, on the other hand, it is by no means certain that some other books may not have been prepared with that object. Book No. II of the Seventh Set is a case in point. The marginal diagram shows the arrangement of its imprints.



The formula is indicated by *a b c d e f*; it is repeated 7 times on the two pages 4 and 5; the fourth impresion is divided between page 4 and page 5, about one-half of the formula standing on either of those two pages. The reader is supposed to read down the left-hand columns which stand upright. Having read down column I on page 4, to the middle of the 4th impression, he continues with the other half of that impression in column II on page 5. He then

turns the book, and similarly reads the remaining (formerly right-hand, but now also left-hand) columns III and IV. Such an orderly arrangement can hardly be explained on any other supposition than that of being made with a view to intelligent reading. Occasionally also anomalies are met with, the only satisfactory explanation of which seems to point to a similar conclusion. One such anomaly will be found discussed in the detailed description of book No. VI of the Fourth Set. It is on considerations such as these, that I have provisionally determined, and shown in the illustrative Plates, the top and bottom of the texts of most of the nine sets of block-prints, as well as the direction of the script of some of them, such as those of the Fourth and Seventh Sets. I do not claim for these determinations more than a provisional character. Very possibly a more minute and thorough examination of the block-prints, than the limited time at present at my command admits, may hereafter lead to more definite results.

Orientation of the Books.

The case, above discussed, of book No. II of the Seventh Set, is instructive on another point, namely, whether these block-print books are to be read from the left to the right, beginning with the first page, or from the right to the left, beginning with the last page or at the back of the book, to speak from the European point of view. From the diagram it will be seen that the reader first reads the pages (*i. e.*, columns I and II) from the left to the right (and so on, throughout the book), and then, turning the book right round, from the right to the left (*i.e.*, columns III and IV, and so on, throughout the book). It would, therefore, appear that there is really no right or left, beginning or end of the book, in the sense of the modern European practice. This conclusion seems to be confirmed by the books Nos. I and II of the Third Set, of which, to judge by the arrangement of the text (see the detailed description) No. I must be read from the left to the right, while No. II must be read from the right to the left. See also book No. V of the Second Set.

Orientation of the Printing.

The question on which side of the page the process of printing commenced, whether on the right or left side, the top or bottom of it, is fairly easy to determine in many cases. When there is a broad, blank margin on one side of the page, while the print runs up to its very edge on the other side; or when a column of print begins with a complete impression of the formula on one side, and ends with a part-impression on the other side, it is fairly certain that the printer commenced his work on the former of the two sides. Books Nos. VI and VII of the Fourth Set afford a good illustration of this conclusion. The point is of

no great importance in itself; but it may in some cases prove auxiliary in determining the orientation of a script or text.

The Question of Genuineness.

Considering the abundance of the block-prints and the mystery of their scripts, it is not surprising that the suspicion of forgery should suggest itself. It suggested itself to me at an early stage of my acquaintance with the Khotanese books; and I am informed that it has also suggested itself to some of the British Museum authorities and others. But it was not till the summer of 1898 that the suspicion took a more definite shape in a letter, dated the 29th June, 1898, which I received from Mr. Bäcklund, Swedish Missionary in Kashghar, in response to a request by me for information on the subject; for at one time, in the course of my examination of the block-prints my suspicion had been much strengthened by the observation of the extreme want of order in certain books. This result was subsequently neutralised by the observation of the striking consistency of order in other books. It became clear that, as I have already shown, both phenomena are quite compatible with a general genuineness of the block-print books; and in fact, all the evidence that gradually accumulated has tended to confirm that conclusion. Mr. Bäcklund's account is as follows:

"It is my duty to own that till quite recently I have scarcely taken any interest in that old Khotan literature. In April last [1898], however, Islām Akhūn brought to me three copies, which, according to what he told me, had been found in the neighbourhood of Aq Safil, buried under sand in a hollow tree, together with other books of the same kind. Some days before, he had sold two or three copies to Mr. Macartney also,[4] but nevertheless he urged me not to say a word to Mr. Macartney about my acquisition. Upon my having a look at the books to discover whether they were print or hand-written, he felt somewhat uneasy and whispered, "'it is astonishing how attentively he is looking at the books.'" I offered him less than the half of what he asked, and he not only handed over to me the books without haggling, but also gave me into the bargain some old coins he had with him. When he had gone out, one of our servants, entering my room said, "'Sāhib, I want to tell you that these books are not so old as they are pretended to be. As I know how they are prepared, I wish to inform you of it. When I lived in Khotan, I wished very much to enter into the business, but was always shut out and could even get no information about the books. At last I consulted my mother

[4] These are probably included among the eight books which were sent to me with a letter dated the 13th April, 1898. They were acquired from Islām Akhūn, but were stated by him to have been found in Kiang Tūz on the road to Cherchen.

about it; and she advised me to try and find it out of a boy with whom I was on very intimate terms, and who was the son of the headman of this business. So, one day I asked him, how they got these books, and he plainly told me that his father had the blocks prepared by a cotton-printer,"" etc. Now it is evident that the servant might have said all this from jealousy only, but I now determined to examine the books with more critical eyes than before. Then the following facts became clear to me immediately:

(1) The rich supply of books, which may be purchased at any price we are pleased to put on them, although every European traveller who has been in Khotan has taken a great interest in them, not mentioning the Russian Consul and Mr. Macartney who have bought what they have come across.

(2) The apparent freshness of them, as for instance—

(*a*) the sharp corners of the copper plates and nails which are covered only with a very thin layer of rust;

(*b*) no rust from the plates sticking to the paper under the plates;

(*c*) the corners of the books quite square (not round, as they usually are in old books), and the edges recently cut though in such a manner as to make them look old;

(*d*) although without proper covers, the outside leaves as well as the leaves in general were well preserved, but one here and there destroyed *betwixt two fresh ones*;[5]

(*e*) no yellow spots or marks of handling by readers, as usually occur in old books;

(*f*) the paper, though very ill-treated (burnt and smoky), still strong almost as if it were new;

(*g*) the paper exactly of the same kind, as prepared in Khotan in the present day.

Now if these books are forgeries, must not there have been some genuine ones, after which these are made? Certainly, I think so, especially in order to account for the characters. But I do not think they took the pains to copy any text—they may have or they may have not—of the original, but very likely put the letters in a preposterous way to make it look like writing. As for the hand-written ones, I have no particular opinion, as I have had no opportunity to examine them. But I do not think that it is at all impossible that they should be forgeries. You see I purchased the volumes I have spoken of—three of the longest that have been sold—for a total of Rs. 7, and certainly I payed too much. If they can get twice as much, very likely they would not hesitate to prepare actual manuscript."

[5] The italics are Mr. Bäckland's.

In a letter written by Mr. Bäcklund to Mr. Macartney, on the 8th April, 1898, the day after he had purchased the above-mentioned three block-print books, I find the following additional information:—"It has been communicated to me by a person, who is well acquainted with these things [apparently the servant above referred to], that these books are not old, but are continually made now-a-days also; and he pretends to know the printer also. The books are said to be prepared like this: after being printed, the sheets are hung up in the chimney in order to make them look old. They are now burnt in parts and covered with soot. When they have assumed as dark a colour as seems to be suitable, the soot is wiped off and the papers are nailed together into a book and taken out into the desert, where they are buried in the sand. Having remained there for some time they are "discovered" and brought out into the market in order to—make fools of the Europeans. Examine the paper in the books and you will find it quite of the same kind, as is produced in Khotan now-a-days; and the white spots in it here and there point it out not to be of an ancient date."

With regard to the three books, purchased by Mr. Bäcklund as related above, he informed me in a subsequent letter, dated the 10th October, 1898, that "as he considered them useless, he handed them over to an English traveller, Mr. R. P. Cobbold;" and that "soon after having got rid of them, a man offered him some very fresh prints, which he refused to take." The books thus obtained by Mr Cobbold afterwards passed into the possession of the British Museum, and I shall have occasion to refer to them again.

I quote these letters so fully, in order that the case of the forgery-theory may be stated quite fairly. To Islam Akhūn's behaviour and the servant's denunciation too much force should not be attached. They are nothing more but what may be expected under the circumstances. The points enumerated by Mr. Bäcklund are those deserving consideration. And here it should be noted, in the first place, that they only refer to Khotanese block-prints, not to manuscripts, and secondly, that they are based on a very limited number of specimens. Mr. Bäcklund admits—what indeed is obvious—that forgery presupposes the existence of a genuine original which was imitated. The suggestion is that a distorted imitation of this original was made purposely, and that that fact accounts for the mystery of the scripts. This does not seem a plausible hypothesis. No intelligible original, such as the suggestion assumes to have existed, has been produced; if it existed, the finder, surely, would have disposed of it first, and when his genuine stock was exhausted, he might then have had recourse to forgery to replenish his stock in trade. Something of this kind, indeed, as I imagine and as I shall presently

show, has probably actually happened; but not in the way required by the hypothesis referred to. Moreover, as my detailed description of the block-prints shows the varieties of the (*ex hypothesi*) forged script are so numerous and so intricate as to require the allowance of a much longer time for their elaboration, than has actually passed since forgeries can have commenced, at most about ten years ago. The trade in forged prints could only have arisen with the advent of modern European travellers. The earliest of these is General Prjevalski who visited Khotan in 1885, and at that time these books were unknown and unthought of. The first objection, mentioned by Mr. Bäcklund refers to the cheap price of the books. This is a point which may be argued either way, and is usually considered to speak rather in favour of genuineness. Mr. Bäcklund obtained his three books for Rs. 7; but for some block-prints in the British Collection a rather good price has been paid. For the book G. 9 (Eighth Set) Rs. 40 were paid; for the book G. 8 (No. VI in the Seventh Set) Rs. 45; for the two books in M. 5, Rs. 40; for the two books in M. 6, purchased from Badruddin, Rs. 40; for the four books in M. 6, purchased from Mr. Högberg together with a lot of antiques, Rs. 200. On the other hand, for the two sets of nine books in M. 7 and eight books in M. 8, only Rs. 40, each set, were paid; and for the two books in M. 4 (*plus* sundry antiques) and the two books in M. 9 (also *plus* sundry antiques) even only Rs. 11-3 and Rs. 20 respectively. The fact is that latterly (early in 1898) when suspicion had once been aroused regarding the genuineness of these books, which tended to interfere with their saleableness, the dealers found it advisable to lower their prices. This is a question of demand and supply, and has little direct bearing on that of genuineness. It is quite possible that a large store of genuine books may have been discovered somewhere in the desert.

The second objection refers to the supposed freshness of the books. I have examined 44 books and my observations do not altogether agree with those of Mr. Bäcklund. There are distinct marks of old rust on the guards and beneath them in the case of some books; in others the corners are by no means "quite square," but irregular and even round; the leaves of some books (outside as well as inside) are in a very damaged condition and rotten, and show the dirty signs of having been handled; some books are printed on a kind of paper which is quite unknown in Khotan.

The probability seems to be that latterly when the store of genuine old books gave out, an attempt was made to produce new ones by imitating some of the old genuine ones. The commencement of this attempt would seem to fall in 1897; and the books offered to Mr.

Bäcklund may have been part of the result of this attempt. Mr. Bendall wrote to me on the 15th July, 1898, "I have been comparing your pamphlet about the xylographs from Central Asia[6] with a block-print recently acquired by the British Museum from Lieut. Cobbold. What is curious is that it is a duplicate of the book figured on your first Plate, but does not contain the writing between the two columns of print to which you call attention." This observation of Mr. Bendall very possibly gives the key to the situation. If there exist any forgeries, they are, in all probability, duplicates of genuine books that have been discovered. The preparation of a duplicate is probably well within the capability of a modern Khotanese forger, but the hypothesis that he is capable of inventing not only one but several scripts, and of intricate, but self-consistent systems of their arrangement in books, and finally of binding them after a method, quite unknown in Khotan at the present day, contains more elements of improbability than the hypothesis of the genuinenesses of the books.

The manufacture of duplicate block-prints postulates the existence of old blocks from which new ones may have been prepared, and from which (or from their new facsimiles) the modern reprints (if there are any) must have been made. I have shown in the description of the First and Second Sets, how utterly improbable it is that the blocks of type can have been invented by the forger. The overwhelming probability is that sets of old blocks of type have been discovered in the Takla Makan, and from these reprints may have been made. But moreover, actual old books printed from those blocks and representing each of the nine Sets must have been found. For the systems of printing and binding which are used in the books are unknown in Khotan in the present day, and imitations could not have been made, unless models had been found.[7] Add to this not only that most of the books, though printed (as I believe) on Khotanese paper, are printed on varieties of it (*viz.*, III*a b c*) which are not known in Khotan at the present day; but also that there are others (as those in the Eighth and Ninth Sets) which are printed on paper of a kind which is not Khotanese at all. That some of the block-print books are printed on paper of the variety III*d* is quite true; but this fact, by itself, does not prove forgery; for it cannot be doubted (considering Oriental conservative habits)

6 Published in the *Proceedings* of the Asiatic Society of Bengal, for 1898.

7 An alternative hypothesis would be that no blocks have been found, but only books; and that from these books new blocks have been prepared, and then employed to print new books. The prints, however, as shown by measurements, are so accurate facsimiles, that considering the inveterate inaccuracy of Orientals this hypothesis of the imitation of new blocks from old prints seems excluded.

that the particular process of paper manufacture which is still followed in Khotan may have been in vogue there for centuries before. At all events, it cannot well be supposed that those books, which are printed on old paper of a kind never known, or no more known in Khotan, are modern Khotanese forgeries. If they are modern forgeries, they must have been forged somewhere else than Khotan; and this complicates the theory of forgery with additional improbabilities. Further, some of the books, admittedly or probably written on paper of Khotanese manufacture, exhibit peculiarities which it may safely be said, would not have occurred to a forger to introduce. I refer, for example, to the sketches of heads, which are found in books No. I of the Fourth Set and No. V of the Seventh Set,[8] to the occurrence of the recensions I*g* and I*h* in book No. VIII of the Fifth Set, and to the Pōthī with its entirely Indian arrangement. Such books cannot well be forgeries.

Further, forgeries may be admitted to be quite possible in the case of block-prints, in the reprinting of which from genuine old blocks there is no serious difficulty. But it is different with manuscripts; and let it be noted, that there are not only fragments of manuscripts, but whole books—some of them fairly large books—of manuscript. The difficulties of forging these would be enormous. In this case there are no duplicates. There are, indeed, a fair number of them in the collection; but they are all different from one another. It would mean that they had all been forged, within a comparatively short time, from no models whatsoever. Some are written on paper which is not Khotanese at all; others are on paper, similar to that of some of the block-prints, but of a variety now obsolete (*viz.* III*a*). Some are bound in the Indian fashion of a Pōthī; others in the Khotanese fashion with copper pegs or twists of paper. These manuscripts cannot be forgeries; and *pro tanto* they make against the hypothesis of forgery in the case of the block-prints.

The mystery of the scripts—so many, and so intricately arranged—is, no doubt a difficulty. But to solve it by the hypothesis of forgery is only to substitute one riddle, and a harder one, for another. How can Islām Akhūn and his comparatively illiterate confederates be credited with the no mean ingenuity necessary for excogitating them? Moreover the riddle of one of the scripts, which occurs in two of the manu-

[8] These sketches are not easily observable. The books were some months in my hands, before I discovered them, and I did so only on carefully examining them page by page. Their existence does not appear to have been known either to Mr. Macartney or to Islām Akhūn who sold them to him. It does not seem probable that a forger would have omitted to draw the buyer's attention to the existence of such a valuable peculiarity in his own handiwork.

script books written on Khotanese paper (variety III*a*), has been solved. In January 1898 I showed these books to Sir Charles J. Lyall, and he agreed with me that the script seemed to resemble Pahlavī and to be in verse. In December last, when I had an opportunity of showing them to Dr. Aurel Stein, who has made Iranian scripts and languages a special study, he at once recognized the Pahlavī script in verse. He even read some portions of it, though, of course, as will be readily understood by those who know the difficulties of reading unknown texts in Pahlavī, it was not possible for him, at such short notice, to determine what the purport of the text might be.

Finally to add a minor point, book No. VI of the Second Set, is a mere fragment. One cannot easily conceive why a forger should sell a portion of a forged book of a kind, of which he could with comparative ease fabricate a large number of complete copies; while it is perfectly natural that he should dispose of a genuine old book, even if he had found or secured only a portion of it.

To sum up, the conclusion to which, with the present information, I have come, is that the scripts are genuine; and that most, if not all, of the block-prints in the Collection also are genuine antiquities; and that if any are forgeries, they can only be duplicates of others which are genuine, and must be found among the books of M. 8 and M. 9 which are written on the III*d* variety of Khotanese paper. By duplicates, I do not mean such in point of size or variety of paper, but with reference to the arrangement of the impressions of the block, or blocks, on the pages. The determination of whether or not there are any such duplicates in the British Collection, must remain over for a future opportunity of examination of the block-prints.

Written Legends.

In addition to the block-printed text, two books (No. IV of the First Set and No. III of the Second Set) contain additional small legends, inserted in blank intervals between the repetitions of the text. Their letters are larger than, and their direction sometimes different from, that of the surrounding text. They have every appearance of not being printed but written by hand. Their shape is irregular, and their ink is darker and does not look as if imprinted from type.

State of Preservation.

On the whole the block-print books are in a fairly good state of preservation. Some of them are much torn or otherwise damaged. Many of them bear stains of oil or other fatty substance; some also seem to have been exposed to the action of fire or water, as their leaves are found more or less strongly singed or rotten.

FIRST SET. (Plates V–VIII, XI and XIII.)

This set comprises eight copies, namely, one pōthī and seven books. Its text is also found on three pages of book No. II of the Second Set; and some portions of the text of it are also found on one page of book No. VIII of the Fifth Set and in book No. III of the Sixth Set.

The text consists of five portions, which comprise 5, 2, 7, 2 and 4 lines respectively, and which I shall distinguish as the formulas A, B, C, D and E. The total text, therefore, comprises 20 lines of type. Each line appears to contain from 10 to 13 letters.

The entire text of 20 lines, with the five formulas, arranged in the order above given, is found in four books (Nos. I, III, IV, V). One book (No. VI) and the pōthī (No. II) contain only the formulas A, C and E; with this difference, however, that in book No. VI the three formulas are arranged connectedly in the same order as in Nos. I, III, IV, V, only leaving blank intervals in the place of B and D; while the pōthī gives the three formulas A, C and E independently of one another, in no connected series and on different pages. Of the remaining two books, one (No. VII) gives only a portion of formula A, *viz.*, lines 1, 2, 4 and 5, omitting line 3; while the other (No. VIII) gives only a portion of formula C, *viz.*, lines 9, 11, 13 and 14, omitting lines 8, 10 and 12. In book No. III of the Sixth Set the same three formulas are found, but not in any connected series; *viz.*, (1) the formula A, mutilated as in No. VII, (2) the formula C, as in No. VIII, (3) a portion of formula E, *viz.*, lines 17, 18, 19, omitting line 20. The two formulas B (lines 6 and 7) and D (lines 15 and 16) have never been found by me separately from the entire text. These formulas, therefore, are found only in the books Nos. I, III, IV, V.

Accordingly the text of the First Set exists in the following eight forms or recensions, denoted by I*a*, I*b*, I*c*, I*d*, I*e*, I*f*, I*g* and I*h*.

(1) The full text (I*a*) of 20 lines, consisting of the formulas A, B, C, D and E, in a connected series. This is found in books Nos. I, III, IV, V; also in book No. II of the Second Set.

(2) The shorter text of 16 lines (I*b*), consisting of the formulas A, C and E, with proportionate blank spaces for B and D; the whole in a connected series (as in I*a*). This is found in book No. VI.

(3) The three formulas A (I*c*), C (I*d*), and E (I*e*), given separately, and forming no connected whole. In pōthī, No. II, also in book No. VI.

(4) The formula A (I*f*), in a mutilated form, *viz.*, lines 1, 2, 4, 5. In book VII; also in book No. III of the Sixth Set.

(5) The formula C (I*g*), in a mutilated form, *viz.*, lines 9, 11, 13, 14. In book No. VIII; also in book No. VIII of the Fifth Set and in book No. III of the Sixth Set.

(6) The formula E (I*h*), in a mutilated form, *viz.*, lines 17, 18, 19. In book No. III of the Sixth Set.

I have carefully measured these various recensions of the text. The measurements were made vertically, horizontally and diagonally across the prints. I measured, in this manner, the whole text in all its forms, as well as groups of lines, single lines, half-lines, groups of letters and single letters. The result was invariably the same; the corresponding measures in the several books exactly agree, in whatever variation they may be taken. Thus measuring the recension I *a*, from the top of the last letter of the first line to the bottom of the last letter in the last line (both on the left-hand side of the column, see Plate V), the distance is exactly 6 inches. Measuring similarly, the distances in the formulas A, C, and E are $1\frac{3}{8}$, $1\frac{9}{16}$ and $1\frac{1}{16}$ inches respectively; and again measuring similarly, the width of each of the intervals between A and C, and between C and E (within which the two formulas B and D are placed) is $\frac{3}{4}$ of an inch. Measuring the recension I*b*, exactly the same result is obtained. This recension, as has been already explained, consists of the formulae A, C and E, with blank spaces for B and D. The distance from the top of A to the bottom of E, including the blank spaces, is exactly 6 inches; the width of each blank space is $\frac{3}{4}$ of an inch; and the widths of A, C and E are $1\frac{3}{8}$, $1\frac{9}{16}$ and $1\frac{1}{16}$ inches respectively. The widths of the latter three formulas or the three recensions I*c*, I*d*, I*e* (see Plates VI and VII), when they occur separately in the Pōthī (No. II), are precisely the same; and the same is the case with them in their mutilated forms I*f*, I*g*, I*h* (see Plates XI and XIII). Thus in the recension I*f*, a blank space is left, for the omitted line 3, between the lines 2 and 4; and measuring from the top of line 1 to the bottom of line 5, the distance is, as before, exactly $1\frac{3}{8}$ inches. It is evident, therefore, from these comparative measurements that the xylographs of the first set were all printed either from the very same block, or from a number of blocks with facsimile type.

It can easily be shown that the latter alternative is the true one, and that in all probability eight blocks have been employed in printing the xylographs of the first set. A block was prepared in this wise. From the smoothened surface of a rectangular (oblong) piece of wood the type was cut out in relievo by counter-sinking the background. Along the edge of the piece of wood a thin ridge was also left in relievo, enclosing the type and the counter-sunk background on all four sides. In order to take an impression the surface of the type was inked. Of course, the ridge was also inked, but this appears to have been done very imperfectly, for in no case did it give more than a very intermittent

impression, and in most cases it gave no distinct impression at all. Traces of the enclosing lines, made by the ridge, may be seen on Plates V, VII, XI and XIII. It is obvious that these enclosing lines afford a ready means for identifying a block. Sufficient of their traces remain to render it nearly certain that there was a separate block for each of the eight recensions of the text.

The blocks used for recensions I*a* and I*b* had the same dimensions. They were long, narrow slabs of woods, measuring $6\frac{1}{2}$ by $1\frac{1}{16}$ inches. There were no blocks of twice that width bearing two columns of type. This is proved by the fact, that when two impressions are seen side by side, their edges frequently touch or even overlap one another, showing that the impressions were taken separately one after the other, and not very carefully. Moreover occasionally when the impressions were taken wider apart, two parallel enclosing lines may be seen between the inner margins of the two prints. On the other hand, it is not probable that both recensions I*a* and I*b* can have been printed off the same block. For the blank spaces (for lines 6, 7, 15, 16) in I*b* are quite clean: smudges would have been unavoidable from the old inked surface, even if the omitted lines had afterwards been left uninked. Moreover, though the surface of the blank spaces is clean, the enclosing lines can occasionally be seen continuing on both sides, and thus showing that the entire surface of the block had been inked. It follows that for recension I*b* a separate block must have been used, in which the surfaces of the two blank spaces had been counter-sunk in order to prevent their being inked. Further it is not probable that the recension I*b* can have been printed by using in combination three smaller blocks of type, containing the formulas A, C and E respectively. For (1) the width of the blank interval is always exactly the same ($\frac{3}{4}$ of an inch), (2) the enclosing lines right and left run perfectly straight, (3) there is never any trace of any top and bottom enclosing lines of the three blocks between the lines of type. These three facts (especially in combination) seem quite incompatible with the use of three blocks to print one text.

There were three blocks, one for each of the recensions I*c*, I*d* and I*e*. They must have measured about $1\frac{3}{8} \times 1\frac{1}{16}$, $2\frac{1}{8} \times 1\frac{1}{16}$, and $1\frac{7}{8} \times 1\frac{1}{16}$ respectively, as may be calculated from the slight traces of the enclosing lines discernible in a few places (see Plates VII, XI, XIII). The blocks for I*c* and I*e* must have been of the same or very nearly the same size. The recension I*d*, (*i.e.*, formula C) is printed six times on a page of the pōthī (see Plate VI), being arranged in two columns of three impressions each. That the page was not printed off two blocks, each containing a whole column of type, or off one block containing a double column of type, is evident from the fact that the six impressions do not keep in

straight line, but approach or overlap one another, both horizontally and vertically. The same remarks apply to recensions Ic (A) and Ie (E), each of which is printed eight times on a page of the Pōthī (see Plates VI and VII).

The two recensions I*f* and I*g* must have been printed from blocks of the same size as those for the recensions I*c* and I*d*. The two pairs of recensions (I*f* and I*c*, I*g* and I*d*) cannot have been printed from identical blocks; for the same reasons which (as explained above) show that the two texts I*a* and I*b* cannot have been printed off an identical block. The case is not quite so clear with regard to the recension I*h* (formula E); for I have noticed occasionally smudges on the blank space corresponding to the omitted line 20. They look like very indistinct traces of the letters of that line, suggesting that its type existed on the block but had not been inked. In the blocks for I*f* and I*g*, the type of the omitted lines does not seem to have existed, the whole space corresponding to those lines being counter-sunk, excepting the ridge along the edges, traces of which ridge are still occasionally discernible (see Plate XI).

For the formulas B and D (that is, the lines 6 and 7, 15 and 16) there do not seem to have existed any separate blocks. So far as the evidence, at present available, goes, those two formulas were never printed separately, but only existed on the block for recension I*a*.

The Pōthī is undoubtedly a genuine ancient relic. It possesses every mark of antiquity in point of general appearance and condition. It is unique in its form of an Indian *pōthī*. Its paper, which is hard, rigid, brittle and discolored, and its print which is faded, suggest considerable antiquity. In point of material and texture its paper is very similar to, if not identical with, the paper of the variety III*b*, on which many of the books are written, but it differs distinctly in colour, being more of a dirty greyish-brown, than of the dirty yellowish-brown of the books. With reference to this Pōthī Sir A. C. Talbot, in his demi-official letter, No. 5972, dated the 23rd October 1897, writes that "it might be of interest to note that the book enclosed between the rough wooden covers bears a strong resemblance to the religious manuscripts still used in the Hemis and other large monasteries of Ladakh; and that among the metal objects sent [9] is what seems to be an old iron arrow-head, very like those with which the arrows in the treasure-rooms at Hemis are tipped. Possibly the excavation was made from the site of some former Buddhist monastery of which, according to Remusat, many must have existed in, and around, the Takla Makan." The evident antiquity of the Pōthī is

[9] This arrow-head as well as the Pōthī were in the consignment M. 4.

a point of great importance; for it is a guarantee of the genuineness of the text. Whatever degree of suspicion may attach to some of the books, they can only be forgeries in a modified sense. Their paper and the actual print may be modern, but their impressions must have been taken from ancient blocks. For, as I have shown, the blocks from which the books and the pōthī are printed, show identical sizes and facsimile types. It is almost demonstrable, therefore, that a set of ancient blocks of type must have been found, from which the books, if any are really modern fabrications, have been printed. The three blocks (for recensions Ic, I*d*, Ie, or the formulas A, C, E) from which the Pōthī was printed, must certainly have been found. It may be suggested that, with the help of these three blocks, the blocks for the other recensions might have been fabricated. But this would not account for the existence of the formulas B and D (lines 6, 7 and 15, 16) in recension I*a*. It is very improbable that a forger, though he might have omitted portions of an existing text, would have gone beyond his pattern and invented new lines of type. The probabilities, therefore, decidedly are for the genuineness of the block of recension I*a*. The preparation of facsimile blocks, from existing patterns, is not at all beyond the capabilities of a clever imitator; and the genuineness of the blocks for the recensions I*b*, I*f*, I*g* and I*h*, which are only differentiated from those for I*a*, Ic, I*d* and Ie by the omission of certain lines of type, might, therefore, be questioned; but the occurrence of the recensions I*g* and I*h* on one page of book No. VIII of the Fifth Set (see Plate XI) renders the hypothesis extremely improbable. Such a solitary and casual insertion of an alien text in a book entirely devoted to a different text would hardly have occurred to a forger. Moreover the state of preservation of that book seems to stamp it as genuinely antique. On this point, however, further evidence is required. If once the writing is deciphered, and its purport understood, that knowledge may very possibly decide the question of genuineness. If it should be found that by the omission of a portion of it, the text is rendered unintelligible, that result might seem to prove that the blocks for the mutilated texts I*b*, I*f*, I*g*, I*h* are the work of an ignorant forger; for, at the present day, neither the writing nor the language of these block-prints is understood in Khotan. On the other hand, it must be remembered that there is good reason to suppose that some of the books were not intended for intelligent reading, but merely for mechanical use.

As regards the determination of the question of what is the beginning and the end of the text, there is some indication given by the arrangement of the text in Book No. I. This book shows two columns on each page (see Woodcut No. 11), each column consisting

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of two impressions of the full text (or recension I*a*). These impressions are invariably[10] placed so as to turn the same side towards the upper and lower edges of the book. It follows that that side of the impression (as shown in Plate V) must be its top or the beginning of the text; and that the feet, or ends, of the two impressions meet in the middle of each column and of the page. For it is natural to assume, that the reader was intended to commence reading at the top of the page, and not in its middle. Of course, on the supposition of a forgery, this conclusion would loose much of its force, as an ignorant forger might by chance have misplaced the impressions; but the peculiar placement of the imprints is so regular as to render such an hypothesis very improbable. Moreover there are other indications, such as the texture of the paper (see the General Remarks on paper), which make against Book No. I being a forgery.

No. I. Book. (Plate V.)

Belongs to M. 6. Acquired from the Rev. Mr. Högberg. Size, 12×9″. Number of forms, 18; but first form is incomplete, the first blank leaf is missing: print accordingly commences on second page (properly fourth page). Moreover second and penultimate forms are double, consisting each of two folded sheets, one placed within the other, and, therefore, having each four leaves or eight pages. Accordingly number of leaves, 39. Paper, variety III*a*; fairly clean. Riveted with three copper pegs.

Contains recension I*a*, printed in two columns on each page; each column consisting of two impressions, placed foot to foot, the upper one being complete (20 lines), the lower, more or less incomplete (as a rule 15 or 16 lines) owing to want of space. (See Woodcut No. 11). The foot-to-foot arrangement of the text is almost invariable. There are only four exceptional pages, on which it stands head to foot. The two varieties of arrangement may be represented thus:—

Ordinary, on 62 pages.		Exceptional, on pp. 2, 46, 65, 75.	
(1)	*abc* *abc*	(1)	*def* *def*
	def *def*		*ghi* *ghi*
	ghi *ghi*	(2)	*abc* *abc*
(2)	*ɪɥɓ* *ɪɥɓ*		*def* *def*
	ʃəp *ʃəp*		*ghi* *ghi*

The second variety is obviously due to mere carelessness on the part of the printer. The first variety, which occurs 62 times, is clearly

10 There are only a very few, apparently accidental, exceptions, which are noted in the detailed description.

intentional. Its object evidently is to make it possible to read the book in the way previously explained in the General Remarks. The regularity of the arrangement seems to indicate that this book was really intended to be properly read. If it had been merely intended for mechanical use by turning the leaves, there would have been no necessity for observing any such strict regularity. It may be further noted that discounting the four exceptional and erroneous pages, one end of the text (indicated by *ghi* in the above diagrams) is always placed in the middle of the page, while the other end is invariably found at the top of the page, in whichever way the book is held. This circumstance seems to prove clearly, which line of the text must be considered its beginning.

The text is repeated four times on every page. There are only two exceptions, *viz.*, pages 48 and 63. On page 48 there are only two impressions, while page 63 has only one. The remainder of the space is occupied with legends in an apparently different alphabet, but which may also be only a written or "current" form of the printed one. They are shown on Plate V, and are evidently not printed from a block, but written by hand.

No. II. Pōthī.

Belongs to M. 4. Brought from Khotan, together with No. VI and other objects; the whole purchased for Rs. 11-3-2. Size, $8\frac{1}{2} \times 4\frac{7}{8}$ inches.[11] Number of forms 45. Leaves of a curious, bottle-shaped form, see Plates VI–VIII; reminding one of the manuscript book found under the skull (see Introduction, pp. xxi). Bound, in the Indian fashion, between two rectangular (not bottle-shaped) blocks of wood, measuring $8\frac{1}{2} \times 4\frac{3}{4} \times 1$ inches, and rough and uneven on the outer, but planed on the inner surfaces; and exceedingly dry and light of weight. Riveted like an Indian copper-plate grant, on the left-hand, narrow side of the oblong, by means of one copper peg, which passes through the "neck" of the bottle-shaped leaves. Paper, of a dirty greyish-brown color, and hard, stiff, and brittle and in many leaves badly fractured; also with many fatty stains and occasional burns. The whole appearance very suggestive of genuine antiquity.

Contains recensions I*c*, I*d* and I*e*, printed separately on different pages, and arranged in two columns, so that there are six impressions of recension I*d* (formula C), and eight impressions each of recensions I*c* and I*e* (formulas A and E) on a page. Recension I*d* (C) occurs most frequently; *viz.*, on forms 1, 2, 6, 7, 9–12, 13 (pp. 2, 3, 4), 14–18, 20–24, 25 (pp. 1–3),

[11] The middle of the pages of the pōthī slightly projects beyond the edges of the blocks.

27, 28, 29 (pp. 2, 3), 30, 35, 36, 38–42, 44 and 45. Recension Ic (A) comes next, on forms 3, 4, 8, 19, 25 (p. 4), 26, 29 (pp. 1, 4), 31–34 and 43. Recension Ie (E) only occurs on the forms 5, 13 (p. 1), and 37.

As a rule, the lines of print run parallel with the narrow side, and accordingly the columns run parallel with the longer side of the page (see Plate VI). There is only one exception in which the lines of print run parallel with the longer side, and accordingly the columns (which in this case are four in number) with the narrow side of the page (see Plate VII); this is the first page of the 33rd leaf. On two pages there is an altogether exceptional arrangement, which may be shown thus :[12]—

Leaf 13, page 1.	Leaf 33, page 3.
e e e e e e	o o
e e	ccc ccc o o
e e e e e e	o o
e e e e e e e e e	o o
	ccc ccc o o
e e e e e e e e e	o o

These three exceptional pages would seem to have been trial pages, to find out the best way of disposing the impressions on the page.

As a rule the columns of the text are arranged so that they stand turned towards the inside (*i.e.*, the neck-like, peg-hole side of the page), either head to head or foot to foot. There are altogether 86 pairs of printed pages, 43 pairs inside and 43 pairs outside the "forms." Out of these 86 pairs, 78 have the columns of text thus arranged, *i.e.*, head to head or foot to foot. In the remaining eight pairs, the foot of the column on one page adjoins the head of the column on the other page; and the arrangement on these exceptional pairs is clearly due to carelessness on the part of the printer. Again among the 78 pairs which have the normal arrangement, 37 have the heads of their columns turned inside, *i.e.*, towards the peg-hole side, while 41 have the feet of their columns turned inside.[13] The pairs are nearly equally

[12] *ccc* denotes recension Ic, and *eee* denotes recension Ie.

[13] In terms of "forms" the distribution stands thus. There are 45 forms. In 2 forms (first and last) only one page is printed. Of the remaining 43 forms, 14 have the head of the text turned inside; 17 have it outside; of 6 others, 2 have the head inside on their interior side, but outside on their exterior side, and 4 have the head outside on the interior, but inside on the exterior; of the remaining 4 forms, 2 have the head inside on the interior and no order on the exterior, while 1 has the head outside on the exterior, but no order on the interior side, and 1 is exactly the reverse of the last-mentioned; (14+17+6+4=41). Obviously the last-mentioned 10 forms (6+4) might be folded the other way, and then would show the exact reverse of their present condition. The remaining two forms have no order, either on the interior or exterior side (41+2=43).

divided between the two systems. But what is puzzling is that the pairs of these two systems, in their present succession, do not follow in any intelligible order (*e g.*, first the 37, and afterwards the 41, or *vice versa*), but they succeed one another pell-mell. If either system had been followed throughout, or if the whole of the pairs of one system had followed the whole of the pairs of the other system, an intelligible order of reading would have resulted; one might have read first one set of alternate pages, and then turning the book right round, one would have been able to read the other set of alternate pages. As it is, the condition of the book suggests that it was not really intended to be read intelligently, but to have its leaves turned mechanically. As the leaves, however, are not numbered, and their serial succession is not fixed, it is possible that the leaves do not now stand in their original order. The latter might have been (say) first 41, then 37, and the break of uniformity might have been due to a *lapsus* on the part of the printer.

No. III. Book.

Belongs to M. 6. Acquired from the Rev. Mr. Högberg. Size, $8 \times 5\frac{1}{2}$ inches. Number of forms 22. Paper, variety III*b*. One leaf (23rd) damaged by two holes. Extensive fatty stains on many pages. Riveted with three copper pegs.

Contains recension I*a*, printed in two columns on each page and standing upright and reversed on alternate pages; thus upright on pages 4 and 6, but reversed on pages 5 and 7, and so forth.

No. IV. Book.

Belongs to M. 5. Size, $11\frac{1}{2} \times 8''$. Number of forms, 30, all cut into separate leaves. Paper, variety III *b*. Twenty leaves, more or less damaged by holes, evidently due to singeing. Many pages soiled with extensive fatty stains. Riveted with three copper pegs.

Contains recension I*a*, printed in two columns on each page, with a wide interval; each column consisting of two impressions; accordingly the full text, four times on each page; but reversed on alternate pages; see Woodcut No. 11. The arrangement of the columns is similar to that in No. II, Pōthī. As a rule, they stand either head to head, or foot to foot, on any pair of juxtaposed pages. There are altogether 57 such pairs. Taking their present order of succession, on 19 of them the columns stand head to head, and on 29, foot to foot; while on the remaining 9 this arrangement is not observed, the position being head to foot. Seeing, however, that the forms are all cut into separate leaves, those leaves on which the exceptional nine pairs stand, may be easily arranged so as to preserve the

regular arrangement. If this is done, we obtain 22 pairs head to head, and 35 pairs foot to foot (total 57). Each of these two sets may easily be read by observing the principle, previously explained, of reading by alternate pages; and the break of uniformity between the two sets may be due to inadvertence on the part of the printer.

Within the intervals, in the centre of the page, additional small legends are inserted, consisting of 4 to 7 letters, double the size of the text, and running at right angles to the latter. They are not seen on every page, but as a rule only on the two outside pages of each form; thus on pages 5 and 8, 9 and 12, and so forth. On eight forms (*viz.*, 5, 8, 14, 16, 21, 24, 26) they occur on the two inside pages; thus on pages 18 and 19, 30 and 31, and so forth. In one form, the 22nd, they are omitted altogether. In the initial and final forms (on which three pages are blank), of course, they occur only once; *viz.*, on pages 4 and 117.

No. V. Book.

Belongs to M. 3. Purchased in July 1897 from Badruddin, an Afghan merchant in Khotan. Size, $11\frac{1}{4}$ by 8 inches. Forms all cut through at the back with a blunt instrument; hence all leaves separate, numbering 39; initial leaf missing. Paper, variety III*b*. Extensive fatty stains on most pages; many damaged by burns. Bound with three twists of paper.

Contains recension I*a*, printed on each page in one horizontal column above and three vertical columns below, making four impressions on each page (see Woodcut No. 12). The three vertical columns always stand in the same position towards one another, but vary in their position towards the horizontal column, having sometimes their head, sometimes their foot towards it. The position of the horizontal column varies in having sometimes its head, sometimes its foot turned to the outer margin of the book. The whole yields a great variety of arrangements, in the choice of which no order is discernible. It is impossible, therefore, to read the book in any intelligent order, and it would seem to be intended for mere mechanical use.

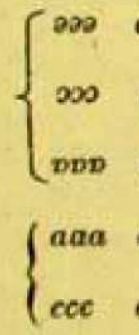
No. VI. Book.

Belongs to M. 4. Brought from Khotan, together with No. II, *q. v.* Size, $11\frac{1}{2} \times 4\frac{1}{4}''$. Number of forms, 31. One blank leaf is torn off, and missing; hence only 63 leaves. Total of printed pages 126 instead of 124; because, contrary to the usual order of these books, the print commences on the 3rd page instead of the 4th page; similarly printing continues to the ante-penultimate page, instead of stopping, as usual, on the ante-ante-penultimate page. Paper, variety

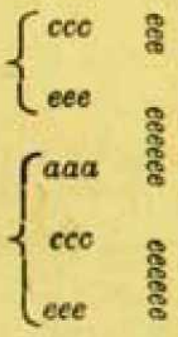
III*a*. Extensively soiled with fatty stains, and damaged by burns. Bound with three twists of paper.

Contains recension I*b*; also recensions I*c*, I*d*, I*e*, printed in two columns on every page. The arrangement of the text of these recensions on the pages is of the wildest kind; there is no discernible order whatsoever. The following diagrams of 19 different arrangements, which I have noticed, will give a good idea of the disorder. Recension I*c* (formula A) is indicated by *aaa*, I*d* (C) by *ccc*; I*e* (E) by *eee*; and I*b* by the corresponding (bracketed) combinations of these three notations. The latter are represented in the same direction in which the recensions are printed in the book.

I. (pp. 1, 2.)[18]



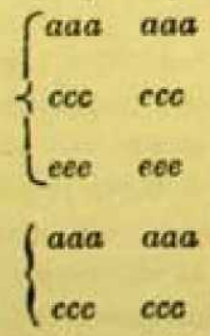
II. (pp. 3, 6.)



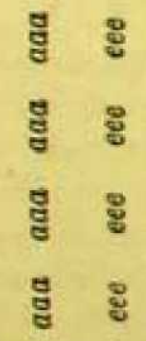
III. (p. 4.)

IV. (pp. 5, 8, 9, 15, 18, 19, 22, 24, 25, 27, 35, etc.)

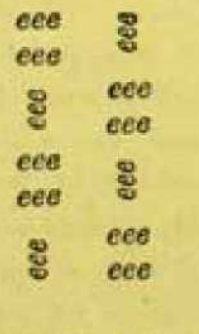
V. (pp. 7, 10, 16, 17, 20, 21, 23, 26, 36, etc.)



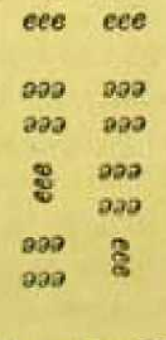
VI. (p. 11.)



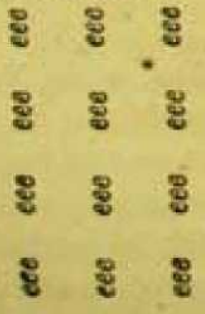
VII. (p. 12.)



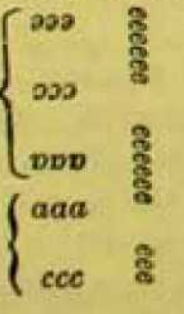
VIII. (p. 13.)



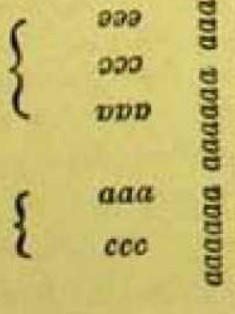
IX. (p. 14.)



X. (p. 28.)



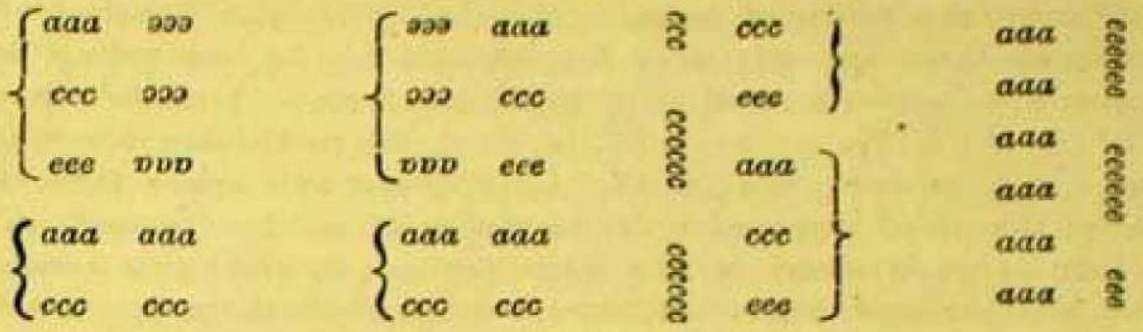
XI. (p. 29.)



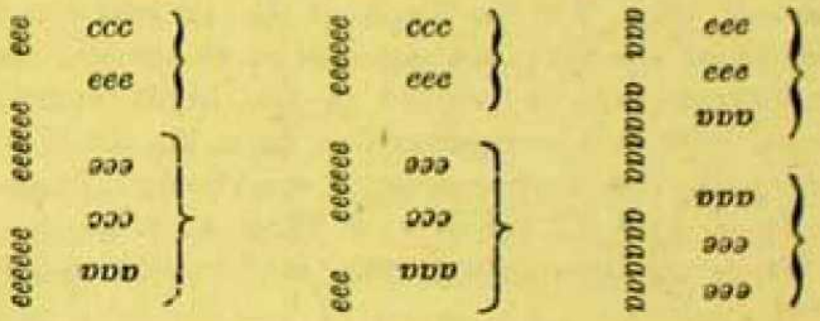
XII. (p. 30.)

[18] The numbers refer to printed pages. Thus printed page 1 = page 3 of the book.

XIII. (pp. 31, 34.) XIV. (pp. 32, 33.) XV. (p. 83.) XVI. (p. 113.)



XVII. (p. 114.) XVIII. (p. 115.) XIX. (p. 116.)



Fourteen of these variations occur within the first 36 printed pages alone. It is obvious that with such a planless arrangement of the texts no proper reading of the book is possible. It can have been intended only for mechanical use.

No. VII. Book.

Belongs to M. 7. Acquired by Mr. Macartney, together with eight other books, from Islām Akhūn for Rs. 40. Said to have been found in a half-buried house in Aq Talā Tūz, see Introduction, p. xvii. Size, $13 \times 11\frac{1}{2}''$. Number of forms, 39. Paper, variety IIIc. Many leaves bear fatty stains, and a few are damaged by burns. Riveted with three copper pegs; the guards consisting on one side of irregular quadrangular pieces, about $2\frac{1}{2}''$ square, cut from an ornamented plaque, similar to those shown in Plate IV, fig. 1, on the other side of circular pieces, about $1\frac{1}{4}''$ diameter, resembling a coin (see Plate IV, figs. 2–9). Printing very carelessly done. The block was not properly inked, the impressions are very faint; moreover they are not properly adjusted; not unfrequently one or two lines of two successive impressions are printed over one another; often the columns are not kept straight.

Contains recension I*f*, *i.e.*, lines 1, 2, 4, 5 of A, printed in four columns on each page, each column (except the second) consisting of seven or eight impressions; but in the second column on each page

(counting from the outer margin of the page) one impression, being the fifth of the series of eight, is omitted, leaving a square blank. To this rule there are only very few exceptions: on one page (form 23, page 1) I have observed only three columns; and on four pages (f. 21, p. 4; f. 30, p. 4; f. 33, p. 3; f. 37, p. 4) there is no blank space; and on one page (f. 13, p. 4) the blank space takes the place of the third impression of the series of eight. On each page the four columns stand in the same position towards one another, either all four upright, or all four reversed; but there is no order whatever with regard to different pages; on one page, all four columns may be upright, on the next page they may again be all upright or they may be all reversed. No. VII in Woodcut No. 12 will give some idea of the arrangement of the text on the pages of this book. In five places an altogether different text is printed in the blank space, and the print of this text, with one exception (on form 22, p. 1), always runs at right angles with the proper text of the book. These five places are: form 4, pp. 2, 3; f. 22, pp. 1, 4; f. 23, p. 4; f. 27, pp. 2, 3; f. 29, pp. 2, 3. The text, thus introduced, is formula A of the Second Set.

No. VIII. Book.

Belongs to M. 7. Found and acquired in the same way as No. VII, *q.v.* Size, $10\frac{1}{2} \times 6\frac{3}{4}''$, but elliptical in form, as shown in Woodcut No. 12. Number of forms, 44. The usual three blank pages are wanting at one end of the book; on the other hand there is in the middle of the book one form with three blank pages, from which it would seem that in binding the book the final form has been misplaced. Paper, variety IIIc. Numerous fatty stains, and a few burns. Riveted with two copper pegs only, the guards being small elliptical (about $1 \times \frac{3}{4}''$) pieces, cut from a plaque, similar to the round pieces shown in Plate IV, figs. 4–9.

Contains recension I*g*, *i.e.*, lines 9, 11, 13, 14 of formula C, printed in five columns on each page, each column consisting as a rule of two impressions; therefore ten impressions of the text on each page. Exceptionally $2\frac{1}{2}$ impressions are found on a few pages. As a rule the columns are turned head to head on two adjoining pages; out of a total of 84 pairs of such pages, that arrangement is found in 58 pairs. In 6 other pairs the columns are turned foot to foot. In the remaining 20 pairs, the foot of the columns on one page is turned towards the head of the columns on the adjoining page.

Second Set. (Plates IX, X, XIII and XIV.)

This set comprises six books. Some portions of the text are also found in the three books of the Sixth Set, and in book VII of the First Set. A detailed description of this second set, illustrated by two Plates (Nos. I and II), was published by me in the *Proceedings* of the Asiatic Society of Bengal, for April, 1898 (pp. 124–131). I shall, therefore, here content myself with a briefer account, but correcting some errors and adding such information as I have been able to glean in the meantime.

The text, occurs in two different recensions, a shorter one of 12 lines and a longer of 13 lines, which I shall denote respectively by II*a* and II*b*. The shorter recension II*a* (see Plates IX, fig. 2 and X, fig. 1) has its text arranged in two columns, with a wide interval, running vertically, while another wide interval intersects the two columns horizontally between the 7th and 9th lines. The two intervals thus present the shape of a cross. The longer recension II*b* (Plate X, fig, 2) fills up these cross-shaped intervals with additional texts. It consists, therefore, of three columns, the additional column being placed in the vertical interval, and of thirteen lines, the additional line occupying the horizontal interval. It will be noticed that there are a few differences in the type of the two recensions, *e.g.*, in the first letter of lines 6 and 7; but this may be, merely due to imperfect inking. Recension II*a* is found in books I–III and recension II*b* in books IV–VI.

The shorter text II*a* which is common to both recensions, consists of six portions or formulas, which I shall distinguish as A, B, C, D, E and F. The formulas A, B, C comprise lines 1, 2, 3—5, 6, 7—9, 10, 11, 12, 13 of column I respectively, while formulas D, E, F are made up of the corresponding lines of column II. The 4th line appears to be an additional one, inserted into what must have been originally an interval, similar to the additional line inserted, in the longer recension II*b*, into the still existing horizontal interval. It would seem that a third recension must have existed, which possessed two horizontal intervals, between lines 3, 5 and 7, 9 respectively. I have not, however, met with this third recension in any book. Of the six formulas, C (*i.e.*, lines 9–13 of column I) is found in books Nos. I and II of the Sixth Set (see Plate XIV), while formulas A, B, D, E (each consisting of three lines) are found in book No. III of the Sixth Set, and formula A is also found in book VII of the First Set (see Plate XIII). As yet the formula F has not been found by me separately in any book.

For printing these several texts seven different blocks must have been in use: one for recension II*a*, another for recension II*b*, and five more for the five formulas A,B,C,D,E. This is clearly shown by the enclos-

ing lines which still exist. These lines, *e.g.*, are seen running right round the two columns of recensions II*a* and II*b*, see Plates IX and X. They are also seen enclosing each of the five formulas A, B, C, D, E, see Plates XIII and XIV. As shown by these lines, the dimensions of the blocks must have been about $1\frac{3}{4} \times 1\frac{5}{8}$" for A, $2\frac{3}{8} \times 1\frac{3}{8}$" for C, $2\frac{1}{8} \times 1\frac{1}{4}$" for D, and $1\frac{5}{8} \times 1\frac{1}{4}$" for E. The additional portions, *viz.*, the middle column III of recension II*b*, line 4 of recensions II*a* and II*b*, and line 8 of recension II*b*, do not appear to have been printed separately; nor is there any evidence to show that separate blocks existed for printing them.

It is probable that once there existed three blocks: (1) a block holding a text of 11 lines, omitting line 4 of recension II*a*, and therefore showing two blank intervals and presenting the shape of a double cross; I may call this recension II*c*; (2) a block holding a text of 12 lines, with one blank interval, in the shape of a single cross, being recension II*a*; (3) a block holding a text of 13 lines, with no blank interval, being recension II*b*. No book, exhibiting recension II*c*, has come to light. The block for it, therefore, cannot have been found by the treasure-seekers. If it had been found, it is morally certain (on the assumption of forgery) that books would have been printed with it and brought into the market. But, the block for recension II*c* not having been found, it is difficult to understand, on the one hand, how the existence of recension II*a*, should have suggested to a forger to omit line 4 and manufacture blocks for A, B, D, E; or, on the other hand, how the separate existence of A, B, C, D and E should have suggested to a forger to combine them into one text II*a*, and manufacture a block for it, containing the intermediate line 4 and a blank interval between lines 7 and 9; or again, to combine them into an alternative text II*b* and manufacture for it another block containing the two intermediate lines 4 and 8. One can imagine a forger omitting extant lines, but not inventing new lines for which he has no pattern. Add to this that the formula F has never been found printed separately; so that the forger would have had to invent, for the recensions II*a* and II*b*, not only the intermediate lines, but also the whole formula F. The improbabilities of such a theory are overwhelming. It follows, therefore, in the alternative, that either the books are genuine- or that at least the orginal blocks must have been found for the recensions II*a* and II*b* as well as for the formulas A, B, C, D and E. From these original blocks, of course, books might have been printed; but the forgery could have extended no further.

With regard to the question of the beginning and end of the text, book No. III affords a similar test to that in book No. I of the First Set. In that book one end of the text is always turned towards its upper and lower edges, whence it may be concluded that that end

holds the beginning or the top-line of the text. On the Plates the text is represented in the position thus indicated.

One book, No. III, of this Set, as will be shown below, is provided with additional small legends, similar to those in Book IV of the First Set.

No. I. Book.

Same as "Block-print β" in *Proceedings*. Belongs to M. 3. Size, $6\frac{3}{4} \times 4''$. Number of forms, 38. Riveted with three copper pegs, which are held in position by two copper slips, running in front and at the back of the book, along its longer side, and measuring $6\frac{3}{4} \times \frac{3}{8}$ inches. Paper, variety III*a*. Fatty stains on many leaves; no marks of burning or singeing.

Contains recension II*a*, printed once on every page, and standing upright and reversed on every second or third form; thus upright on forms 1, 2, 5, 6, 7, 9, 11, 14, 17, 19, 21, 23, 25, 27, 28, 31, 32, 35, 36, 38; reversed on forms 3, 4, 8, 10, 12, 13, 15, 16, 18, 20, 22, 24, 26, 29, 30, 33, 34, 37.

No. II. Book. (Plate IX, fig. 2.)

Same as "Block-print α" in *Proceedings*. Belongs to G. 7. Size, $11\frac{1}{4} \times 7\frac{3}{4}''$. Number of forms, 32. Peculiar in having covers of pasteboard, made of four ordinary leaves pasted together. Paper, variety III*b*. Most pages stained, and singed or burned. Bound with three copper nails.

Contains recension II*a*, printed in three columns on each page; each column consisting of one impression; accordingly the text three times on each page, but reversed on alternate pages, *i.e.*, turned foot to foot, similar to the arrangement of book No. IV of the First Set (Woodcut No. 11). With the exception of one form, the columns of the text are printed parallel to the narrower side of the book, so as to turn their foot towards the inner margin of the book, and so close together that their edges touch, and sometimes overlap one another. The exceptional form is the 22nd. It bears on page 1–3 also impressions of recension I*a* of the First Set; and the impressions of the two different texts, indicated in the subjoined diagrams by the letters *dc ba* and the numerals *321* respectively, are arranged as follows; the inner margin of the page being indicated by parallel lines.

1st page. (Plate IX).	2nd page.	3rd page.	4th page.
321 dc ba	*987dc badc ba987*	*321dc badc ba321*	*hg fehg fe*
654 hg fe	*654hg fehg fe654*	*654hg fehg fe654*	*ml kiml ki*
987 ml ki	*321ml kiml ki321*	*987ml kiml ki987*	*ml kiml ki*
ml ki hg fe dc ab			*hg fehg fe*

This would seem to have been the trial-form, employed to discover by which arrangement the largest number of impressions could be crowded on to one page. The usual arrangement is shown in the margin.

ab cdab ef ik ghef lmki
dc badc hg fehg ml kiml
ab cdab ghef lmik
badc fehg kiml
cd gh lm
ba fe ki

No. III. Book. (Plate X, fig. 1.)

Same as "Block-print γ" in *Proceedings.* Belongs to M. 3. Size, $11\frac{1}{2} \times 4\frac{1}{8}$ inches. Number of forms, 40. Bound with three twists of paper. Paper, variety III*a*. A few fatty stains and burns; on the whole fairly clean. Printing ends on the penultimate page of the last form, instead of the ante-ante-penultimate page as usual.

Contains recension II*a*; there being two impressions of it on each page, placed foot to foot, the upper one being complete (12 lines), the lower more or less incomplete (as a rule 10 lines), the arrangement being similar to that in Book No. I of the First Set. There are only four exceptional forms, on which the impressions are placed head to foot; *viz.*, forms 6, 12, 17 (1st, 2nd, 4th pp.), and 31 (2nd and 4th pp.). Seeing that there are 40 forms (or 156 printed pages), these few exceptions (13 pages) are evidently accidental misprints. As in the case of book No. I of the First Set, this "foot-to-foot" arrangement of the text, seems to be a clear indication as to which is to be taken as its top-line. Within the horizontal intervals, in the middle of the page, additional small legends (similar to those of No. IV of the First Set), consisting of 4 to 6 letters, are inserted, running in the same direction as the text, but of somewhat larger size, and apparently written by hand. They are all shown on Plate II of the *Proceedings* for 1898. As in the case of Book No. IV of the First set, they do not occur on every page, but only on the two outside pages of a form. Moreover, in nearly one-half of the forms (*viz.*, 19 out of 40) they do not occur at all.

No. IV. Book.

Same as "Block-print δ" in *Proceedings.* Belongs to M. 3. Size, $8 \times 5\frac{1}{2}$ inches. Number of forms, 40. Riveted with three copper pegs, the guards being small oblongs, 1 or $1\frac{1}{4} \times \frac{3}{8}$". Paper, variety III*a*; on the whole fairly clean, no burns. Printing rather indistinct, owing to the inferior quality of the paper, on which the ink has a tendency to run, so that the imprint occasionally shows on the other side, in which case sometimes the reverse page is not printed at all.

Contains recension II*b*, printed once on each page, but, exceptionally, standing upright on every page, so that the book can be read right through, from page to page, without turning it right round. To this arrangement there are only a few exceptions; on 14 pages (out of a total of 74 printed ones) the imprint is reversed, and these are clearly accidental errors. There are 12 forms, which at first seem not to agree with the arrangement, all the imprints on them being reversed. But they only require to be folded the other way, and to be turned, when they all come right. With respect to these forms, therefore, the book has only been carelessly bound.

No. V. Book. (Plate X, fig. 2.)

Same as "Block-print ε" in *Proceedings*. Belongs to M. 3. Size, $9\frac{1}{2} \times 4\frac{1}{4}$ inches. Number of forms, 34. Riveted exactly like No. IV. Paper, variety III*a*. Many stains, but no burns. Printing similar to that in No. IV.

Contains recension II*b*, printed twice on each page, so that the two impressions stand head to foot, the lower one being complete (13 lines), the upper, more or less incomplete (as a rule 6 or 8 lines, *i.e.*, ll. 13–8, or ll. 13–6) owing to want of space. There are only four exceptional pages on which they stand foot to foot, *viz.* form 7, p. 4; f. 17, p. 3; f. 23, p. 1, and f. 26, p. 1; and these, of course are careless misprints. There are also two pages on which there is only one impression; *viz.* form 17, p. 4 and f. 26, p. 2.

In the ordinary, head-to-foot, arrangement, the pairs of impressions stand upright and reversed on alternate pages.[15] The two varieties of arrangement may be represented thus, the parallel lines representing the inner edge of the pages or the fold of a form.

Ordinary.		Exceptional.
efgh	*ɯɭʞɪ*	*efgh*
iklm	*ɥɓʃə*	*iklm*
abcd	*pɔqɒ*	*ɯɭʞɪ*
efgh	*ɯɭʞɪ*	*ɥɓʃə*
iklm	*ɥɓʃə*	*pɔqɒ*

The ordinary arrangement is very curious for two reasons: (1) because the page commences with the incomplete member of the pair of texts, which must have been awkward in reading the book, if it was meant for reading; (2) because it compels the reader to begin with the left hand pages, that is, at the wrong end of the book, assuming

[15] There are some three or four exceptional pages which do not keep the alternate order. These evidently are misprints.

that the proper way of reading these books is from the right to the left in the Semitic fashion. It is, however, by no means certain that the direction of the scripts is from the right to the left. See also the General Remarks on the Orientation of the Books.

No. VI. Book.

Not mentioned in the *Proceedings*. Belongs to M. 6. Acquired from the Rev. Mr. Högberg. Size, $9\frac{1}{2} \times 4$ inches. Number of forms, 8; but the book is a mere fragment; a large portion, including beginning and end and the rivets, is wanting. Paper, variety III*a*; some stains, but no burns. Printing similar to that in Nos. IV and V, but even worse; ink has run so badly through the paper that many pages could not be printed at all, the print on one side showing through on the other.

Contains recension II*b*, printed exactly as in No. V, two impressions on each page, standing head to foot, the lower being complete, the upper, incomplete.

Third Set.

This set comprises three books. The peculiarity of them is that their forms are not placed one upon the other, as in the bound books of all the other sets, but are inserted one within the other. Moreover the printing does not commence upon the fourth, but on the second page, and does not stop on the ante-ante-penultimate, but on the penultimate page.

The text of this set consists of two short formulas A and B. Formula A is made up of five short lines, of about 5 or 6 letters each. It is found in all three books. Formula B consists of four longer lines of about 7 or 8 letters each, and is only found in two books, Nos. II and III.

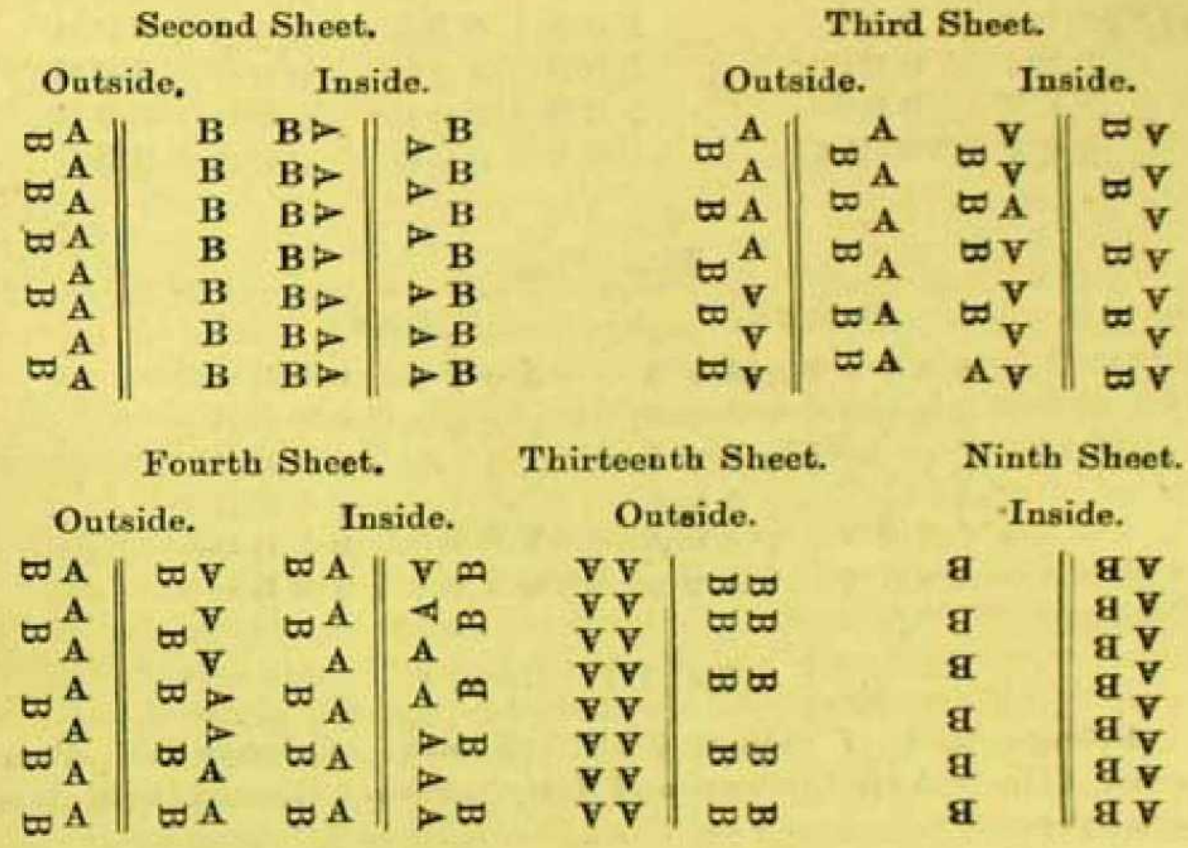
For printing these two formulas, two separate blocks must have been used. This is evident from the lines, enclosing the formulas, as well as from the different size of the two blocks. Measured between those lines, the dimensions are $1\frac{5}{8} \times 1\frac{3}{8}''$ and $2\frac{1}{4} \times 1\frac{7}{16}''$ respectively.

There is nothing to indicate what is top and bottom of the formulas.

No. I. Book. (Plate XI.)

Belongs to M. 3. Size, $14\frac{3}{4} \times 4\frac{1}{4}''$. Number of forms, 16. It was originally bound with three twists of paper. These having broken, the book has been re-stitched with fresh thread, apparently by the finder, or in Mr. Macartney's office. It is, therefore, not certain whether the number of the forms is complete. Paper, variety III*b*. Leaves much burned and torn.

Contains both formulas A and B, printed in two rows on each page, but without any particular order. This is illustrated by the subjoined diagrams, which also indicate the relative position of the two formulas and occasional irregularities in printing them. The straight lines indicate the fold of the sheet. As a rule, the formulas occur 5–8 times in a row, and occupy alternate rows. There are only three exceptions; on the 15th sheet the formula B occurs alone; on the outside of the 13th sheet, each formula occupies both rows of a page; and on the outside of the 2nd, and the inside of the 9th sheet, there is only one row on one page, and that row is filled with prints of formula B alone; probably the A row has been simply forgotten by the printer, as its proper space is left blank.



No. II. Book.

Belongs to M. 6. Acquired from the Rev. Mr. Högberg. Size $8\frac{1}{2} \times 6\frac{1}{4}$". Number of forms 13. Paper, variety III*a*. A few fatty stains, and marks of singeing. Stitched in three places with loops of loosely twisted thread.

Contains both formulas A and B, printed in three and four columns, each column containing as a rule five impressions. As may be seen from the subjoined diagrams, there is no order whatever in the arrange-

ment of the impressions. Occasionally formula A occupies the whole page, in which case there are four columns, with five (or six) impressions in each; total 20 (or 24) impressions. At other times formula B occupies the whole page, when there are only three columns, with five impressions in each; total 15 impressions. But in many cases both formulas occur promiscuously on the page, in which case also there are only three columns, with a total of 15 or 16 impressions. Clearly this book cannot have been intended for intelligent reading.

First Sheet.

Inside.

ꟻ B A	B B B
B B A	B B B
B ꟻ A	B B B
B B ∀	B B B
ꟻ ꟻ ∀	∀ B B A

Second Sheet.

Outside.		Inside.	
B B B	B B B	ꟻ ꟻ B	B B B
B B B	B B ꟻ	ꟻ ꟻ ꟻ	B B B
B ꟻ B	ꟻ ꟻ ꟻ	ꟻ ꟻ ꟻ	B B B
B ꟻ B	ꟻ ꟻ B	ꟻ ꟻ ꟻ	B B B
B ꟻ B	ꟻ ꟻ ꟻ	ꟻ ꟻ ꟻ	B B B

Third Sheet.

Outside.		Inside.	
A A ∀ A	∀ A ∀ A	A ∀ ∀ A	∀ B B ∀
∀ A ∀ A	∀ A ∀ A	∀ A ∀ A	∀ B B B
∀ A ∀ A	∀ A ∀ A	∀ A ∀ ∀	∀ B B B
A ∀ A ∀	∀ A ∀ ∀	∀ A ∀ A	∀ B B B
A ∀ A ∀	∀ A ∀ A	∀ A ∀ ∀	∀ B B B
	∀ A ∀ ∀		

No. III. Book.

Belongs to G. 7. Size, 9×7″. Number of forms 18. Paper, variety IIIa. A few burns and fatty stains. Riveted with three copper pegs.

p. 46	p. 47
▶ ∀ A	A A ◀
▶ A A	A A ◀
▲ ∀ ∀	∀ A ▶
▲ A A	∀ A ▶
▶ ∀ ∀	A A ▲
◀ A ∀	A A ◀
▶ A A	A A ◀

Contains only formula A, printed in three columns on each page, the two inner columns consisting of seven, and the outer, of six impressions, which latter stand at right-angles to the former; otherwise there is no sort of order in the relative position of the imprints, as the marginal example may show.

Fourth Set. (Plate XII).

This set comprises eight books. Two of the books contain also other texts in addition to their own, *viz.*, No. VII contains also the text of the Fifth Set, and No. VIII, of the Seventh Set.

The text of the Fourth Set consists of a formula, containing five lines of writing. There appear to have been two blocks, from which this formula has been printed off; for I have noticed a very slight difference in the dimensions of the print: in Books I, III, V, the lines differ by $\frac{1}{8}$ to $\frac{1}{12}$ of an inch in length from those in Books II, IV. The enclosing lines of the block of the longer print alone are preserved in book No. VII, and this block measures, within the enclosing lines, $3\frac{1}{2} \times 2\frac{1}{2}$ inches.

Two of the books seem to afford indications whereby to determine what is top or bottom, right or left, and beginning or end of the text. These are Nos. II and VI. No. II is printed with three columns on each page, and a column consists, as a rule, of six impressions of the formula; but there are two pages on which the columns contain $6\frac{1}{2}$ impressions, and one page on which they contain only $5\frac{1}{2}$ impressions; as illustrated by diagram I on the margin. On the other hand book No. VI is printed with $2\frac{1}{2}$ columns on each page; that is, two columns contain, each, two complete impressions of the formula, while the third column contains only two half-impressions of it; as illustrated in diagram II. It would seem right to conclude from diagram I, that *a b c* must be the top-line; for if *g h i* were taken to be the top-line, the printing would have commenced with a mutilated formula. Similarly diagram II would show that *a* is right and *c* left of the formula, and that the reading of the latter must commence, not with *c*, but with *a*; or in other words that the formula must be read from the left to the right. It would follow, therefore, that if the formula is to be read in the European fashion, it commences in the left-hand upper corner, as shown in the photographic facsimile on Plate XII; or, if it is to be read in the Chinese fashion, its commencement lies in the right-hand upper corner. Unfortunately, as the case of the Fifth Set shows, the argument is not so conclusive as would be desirable.

I

a b c
d e f } 6
g h i

a b c
d e f } $\frac{1}{2}$

II

a b c *a b*
a b c *a b*

2 $\frac{1}{2}$

No. I. Book.

Belongs to M. 7. Said to have been found at Aq Talā Tūz. Size, $23\frac{1}{4} \times 13\frac{1}{2}$." Number of forms, 36. Riveted with three copper pegs,

the guards being large pieces of a broken-up plaque (see Plate IV, fig. 1). In almost perfect preservation. Paper, varieties III*b* and III*c* mixed.

Text printed in the three columns on each page; each column consisting of nine impressions of the formula, which accordingly is repeated 27 times on every page, or 3,726 times in the whole book (*i.e.*, 27 × 138 printed pages). The columns run parallel with the longer side of the book, and stand regularly upright and reversed on alternate pages; that is, upright on pages 4, 6, 8, etc., and reversed on pages 5, 7, 9, etc. The pages 4, 6, 8, etc., of course, are left-hand pages; and when the book is turned right round, in order to bring the reversed formulas into the upright position to read them, the pages 5, 7, 9, etc. now become left-hand pages. It follows, therefore, that on reading this book, all the left-hand pages must be read first, and afterwards all the right-hand pages,—which latter pages, of course, on turning the book round to read them, also become left-hand pages. Accordingly whichever way the book is placed for the purpose of reading, it is always the left-hand pages that must be read.

This book is distinguished from all others, in having a finely executed sketch of a head on the fourth page of the 15th form; see Plate XVII. The sketch is placed horizontally across the page, so that the bottom of it is turned towards the inner margin of the page. From the fact that the columns of the print curve round the sketch, it is clear that, it was drawn on the page, before the latter was printed on. The head seems to me to show Arian features, and is sketched with much artistic skill.

No. II. Book.

Belongs to M. 7. Found at Aq Talā Tūz. Size, $15\frac{3}{4} \times 11\frac{3}{4}$". Number of forms, 17. Bound with three twists of paper. Well preserved; a few slight burns and stains. Paper, variety III*b*. Printing not quite distinct. It commences, as usual on the 4th page, but ends on the penultimate page (*i.e.*, on the 3rd page of the last form).

Text printed in three columns on each page; each column consisting, as a rule, of six impressions of the formula, which accordingly is repeated 18 times on every page. On two pages there are $6\frac{1}{2}$ impressions, and on one page only $5\frac{1}{2}$. The columns stand regularly upright and reversed on alternate pages; that is, upright on the right-hand pages 5, 7, 9, etc., and reversed on the left-hand pages 4, 6, 8, etc. Accordingly this book must be read differently from book No. I; that is, in whichever way it is placed for reading, its right-hand pages must be read. There are only five pages which do not conform to the regular order; these are p. 4 of form 3; pp. 1 and 4 of form 10, and p. 2 of form 15; and these, clearly, are mere lapses of the printer.

No. III. Book.

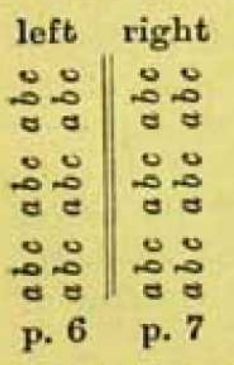
Belongs to M. 6. Purchased from Badruddīn. Size, $22\frac{3}{4} \times 13''$. Number of forms, 19; all (with the exception of forms 7 and 8) cut through at the back, into separate leaves. Very well preserved; only very few and very slight burns and stains. Paper, variety III*b*. Riveted with four copper pegs.

Text printed in three columns on each page; each column consisting of eight impressions of the formula, which, accordingly, is repeated 24 times on every page, or 1,680 times in the whole book (*i.e.*, 24×70 printed pages). The columns run parallel with the longer side of the book, and stand regularly upright and reversed on alternate pages; exactly as in No. II; that is to say, whichever way the book is placed, the right-hand pages must be read. There are only four exceptional pages, due to blundering of the printer; *viz.*, pp. 2 and 3 of form 6; p. 4 of form 9, and p. 1 of form 19.

No. IV. Book.

Belongs to M. 7. Found at Aq Talā Tūz. Size, $10\frac{3}{4} \times 7\frac{1}{2}''$. Number of forms, 30. Bound with three twists of paper. Paper, variety III*b*. Extensively marked with water and fat stains; no burns. Print rather difficult to read, owing to the stains and defective inking. Final blank leaf lost.

Text printed, as a rule, in three columns on each page; each column consisting of two impressions of the formula, which, accordingly is printed six times on every page. The columns run parallel to the narrower side of the book, but do not stand upright and reversed on alternate pages, but keep the same direction on every page, that is, on the left-hand pages the head of the columns is turned outside, and on the right-hand pages, inside, as shown in the diagram on the margin. Hence in reading the book, it does not require turning round. There are a few exceptional pages, on which the imprints take reversed positions, but these are clearly blunders of the printer or binder. There are, however, seven pages, on which the arrangement is altogether different; *viz.*, p. 4 of form 1; and pp. 1 and 4 of forms 6, 10, 18. On these pages the text is printed in two columns, running parallel to the longer side of the book, and each column contains four impressions of the formula, which, accordingly, is repeated eight times on each of these pages.



No. V. Book.

Belongs to M. 3. Purchased from Badruddīn. Size, $11 \times 6\frac{1}{2}''$. Number of forms, 45. Riveted with three copper pegs. Paper, variety

IIIc. Fairly clean; a few fatty stains and small burns; the two outside leaves torn to shreds. Print almost illegible, owing to defective printing.

Text printed exactly as in book No. IV, save that the exceptional arrangement of the text in two columns never occurs.

No. VI. Book.

Belongs to M. 7. Found at Aq Talā Tūz. Size, $8 \times 5\frac{3}{4}''$. Number of forms, 26; but the first form is in shreds, and the last form is misplaced through a blunder of the binder, standing fifth in the present series. Riveted with three copper pegs. Many large fatty stains and a few burns. Paper, variety IIIb. Print almost illegible, owing to defective inking.

Text printed in $2\frac{1}{2}$ columns on each page; each column consisting of two impressions of the formula, of which, accordingly, four complete and two half-impressions stand on every page. The columns run parallel to the narrower side of the book, and are arranged exactly as in Book No. IV. Here, too, as in No. IV, there are a few exceptional pages on which the imprints take reversed positions. An example, which shows also another misprinted anomaly, is given on the margin from form 11.

Form 11. (margin).

p. 2.	p. 3.
a b c	a b c
a b c	a b c
a b c	a b c
a b c	a b c
q p	q p

(no margin.)

It may be noted that there is a slight blank margin at the top of the pages (as indicated in the diagram), while at the bottom the print runs to the very edge. This shows the *modus operandi* of the printer, who commenced printing at the top of the page, though (as shown by the inner column on page 3 of the diagram) not always with the initial edge of the block. But when he came to printing the half-impression on that inner column, he turned the block round, apparently with the object of getting the initial portion of the formula on to the page. It seems that, as long as the whole of the formula could be accommodated on the page, the printer did not care, in what position he placed the impression of it; but when he could only accommodate a portion of it, he was careful in printing its initial portion. This seems to be a reasonable explanation of the anomaly, and it points to what apparently must be taken to be the beginning of the formula.

No. VII. Book. (Plate XII.)

Belongs to M. 6. Purchased from Badruddīn. Size, $11\frac{1}{2} \times 8\frac{1}{2}''$. Number of forms, 12; all cut through at the back into separate leaves. Exceptional in being bound with only two twists of paper, and in commencing its printing on the second, and stopping it on the ante-

penultimate page. Paper, apparently variety III*b*. Rather rotten; several leaves mutilated; very much damaged by extensive fatty stains and burns. Printing rather illegible on many pages; two of them (pp. 10 and 11) being altogether blank, owing to the print on the reverses (pp. 9 and 12) showing through.

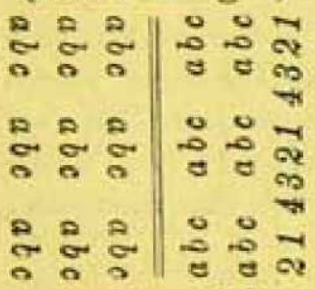
Contains its own proper formula, as well as that of the Fifth Set. The latter, however, is only found on pages 2, 3, 5, 8, 9, 12, 14, 15, 21, 29, 32, 37, 40 and 45; and on these pages it is found in addition to the proper formula of the Fourth Set. When so found, it always occupies the outer side of the page, except on p. 14, where it stands on the inner side; see, below, marginal diagram II. On page 13, it should also have been found, but (apparently by an oversight) the space has been left blank.

Text printed in three columns on each page; each column consisting of three impressions of the formula; that is, either thrice the proper formula of the Fourth Set; or twice that formula and once the formula of the Fifth Set. As the latter formula is longer than that of the Fourth Set, and hence occupies more space, it is only found $2\frac{1}{2}$ times on a page; and on these pages, the lower portions of the columns overlap one another. This will be understood from the diagram I shown in the margin, in which *a b c*, and *1 2 3 4* denote the formulas of the Fourth and Fifth Sets respectively. Here, also, the same *modus operandi* of the printer may be noticed, as in No. VI. He commenced at the top of the page (as shown in the marginal diagrams) where there is a broad blank margin, while at the bottom the print runs right up to the edge of the pages with the half-impression of the formula of the Fifth Set. This circumstance would seem to serve as an indication of the beginning of the latter formula; though this conclusion is not quite borne out by diagram II, which shows the exceptional page 14, above referred to. This diagram would rather seem to show that the beginning of the formula of the Fifth Set lies at its other extremity; but then both pages, especially page 15, show an anomaly in the relative position of the two formulas.

I.

p. 2. p. 3.

(broad margin).

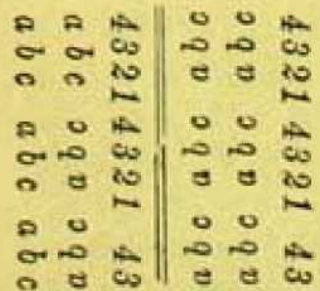


(no margin).

II.

p. 14. p. 15.

(broad margin).



(no margin).

It will further be seen from the above two diagrams that the columns run parallel to the narrower side of the book, and are arranged in a

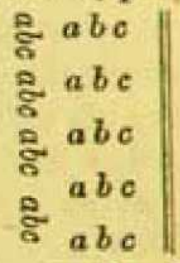
different position from that in books Nos. IV to VI. There the heads of the columns are turned in the same direction on consecutive pages (see diagram in No. IV), while here the heads are always turned in opposite directions, against one another, that is, they are always turned reversely on alternate pages.

No. VIII. Book.

Belongs to M. 8. Found at Kiang Tūz. Size, 14 × 8¼. Number of forms, 20. Paper, variety III*d*. Surface greased, and a few burns. Printing rather indistinct. Riveted with two copper pegs.

Contains besides its own proper text that of the Seventh Set. The latter is found only on one form, the 3rd, where it is printed, on all its four pages, exactly in the same way as the proper formula of the Sixth Set. This formula is printed in two columns on each page, running, as a rule, parallel to the longer side of the book and consisting each of five or six impressions. The columns stand in no particular order, sometimes upright and reversed on the same page, sometimes so on alternate pages, sometimes in the same position on consecutive pages. On four pages (*viz.*, on the first and last printed pages, as well as on the 13th and 28th) the columns stand at right-angles to one another, the outer column consisting of only four impressions, as shown in the marginal diagram.

1st form, p. 14.



Fifth Set. (Plates XI and XII.)

This Set comprises eight books. Its text is found in two different recensions, a shorter one of three, and a longer of four lines. These I shall denote by V*a* and V*b* respectively. Besides its own proper text, there is also found on one page of book No. VIII the text of the First Set.

The shorter recension V*a* is found in all the books of this set; also in No. VII of the Fourth Set. The longer recension V*b* is only found in No. VIII of this set, where it occurs together with recension V*a*. The two recensions only differ from each other by V*b* adding a fourth line to the three lines of V*a*.

Two distinct blocks have been used for printing the two recensions. This is shown by their enclosing lines which may be seen on the facsimiles. The block of V*a* measured $4\frac{1}{8} \times 1\frac{1}{3}$ inches; that of V*b* measured $4\frac{1}{8} \times 1\frac{7}{8}$ inches.

There is nothing to show which is top and bottom, or right and left, or beginning and end of the two formulas. From the way in which

the formula is printed in No. VII of the Fourth Set (Pl. XII), it would seem probable that the top of it is the line which adjoins the formula of the Fourth Set; for on this supposition it would lie on the page in the same direction as that formula. It would also seem probable that it commences on the right-hand side, and must therefore be read from the right to the left; for that half of the formula, which appears on the page of No. VII of the Fourth Set, is, on the above supposition, its right-hand half, and it seems reasonable to assume that, when only one-half could be printed, it was the initial half that was printed. Moreover in certain pages of book No. IV (see below the detailed description) it is always what on the above theory is the left-hand side of the formula which appears in the middle of the page; and this circumstance points to the same conclusion, as it seems also reasonable to assume that, as usual, the reader was intended to commence reading from the margin of the page. But unfortunately this argument is weakened by the fact that in books Nos. I and III, where occasionally only a portion of the formula is printed, it is indifferently either one or the other of its two outer lines that is omitted. The fact is that the force of all such arguments depends on the assumption that these block-print books were intended for reading. If they were not meant for reading, but intended for the mechanical use of merely turning the pages, it was obviously quite immaterial which portion of the formula was printed whenever the space did not suffice to print the whole.

No. I. Book.

Belongs to M. 3. Purchased from Badruddīn. Size, $8\frac{1}{4} \times 5\frac{1}{2}''$. Number of forms, 37; the first and last forms, however, consist of two sheets each, placed within one another, and pasted together[16] to form thick covers, as in No. II of the Second Set. Paper, variety III*b*. Fairly clean. Printing, indifferent. Riveted with three copper pegs.

Contains recension V*a*, printed six times on each page, in a column which runs parallel to the longer side of the book, and stands regularly upright and reversed on alternate pages. The latter rule is not observed on 10 pages out of a total of 142 pages, and these pages, therefore, represent clearly mere accidental lapses of the printer. On a few pages, the formula is only found five-times repeated; but on many pages the sixth repetition, standing too close to the top or bottom of the page, is incomplete, one of the three lines of the formula being omitted. This omitted line is sometimes one, sometimes the other of the two outer lines, so that no conclusion can be drawn as to what is the initial and what the final line of the formula.

[16] In the initial cover the paste has given way, and the leaves are now separate.

No. II. Book.

Belongs to M. 9. Size $7\frac{3}{4} \times 5\frac{3}{4}$". Number of forms, $22\frac{1}{2}$, the seventh form consisting of only one leaf. Paper, variety III*b*. A few leaves damaged by burns and fatty stains. Riveted with three copper pegs, the guards on one side consisting of large fragments of the plaque, shown on Plate IV, fig. 1.

Contains recension V*a*, printed, as a rule, in two columns on each page; the columns consisting, as a rule, each of four repetitions of the formula, and running parallel to the narrower side of the book. On a few pages there are only three repetitions in the column; the formula accordingly occurs, as a rule, eight times, and exceptionally six times, on every page. The columns are placed in the same direction on every page, that is to say, line 1 of the formula always stands alternately near the outer and inner edges of the page, so that in reading the book, it does not require to be turned round. There is only one exceptional page (evidently a misprint) in which the columns are reversed. Thus

Regular Pages.								Exceptional Pages.							
4th				5th				Regular				Reversed.			
a b c d	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*
a b c d	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*
a b c d	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*
a b c d	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*	*a b c d*

As the space is barely sufficient to accomodate the whole breadth of the columns, it happens that occasionally the terminal letters on one side (*a*, *a*, *a*, *a*) of the formula, at other times those on the other side (*d*, *d*, *d*, *d*) are omitted. It is thus impossible to use these omissions as a test for determining the initial and final sides of the formula. The eleventh form is a total exception: on it the text is printed in one column, which consists of six imprints of the formula, and runs parallel to the longer side of the book.

No. III. Book.

Belongs to M. 7. Found at Aq Talā Tūz. Size, $11\frac{1}{4} \times 6\frac{3}{4}$". Number of forms, 52. Paper, variety III*c*. Initial and final leaves damaged; otherwise well preserved. Riveted with three nails; guards round pieces, as shown on Plate IV, fig. 3.

Contains recension V*a*, printed in one column on each page, running parallel to the longer side of the book, and consisting of (as a rule) seven, or (sometimes) eight impressions of the formula. When

there are eight repetitions on the page, the space barely suffices for them; and accordingly sometimes one, sometimes the other of the outer lines of the formula is omitted, the same as in No. I. The columns stand upright and reversed on alternate pages; though there are many misprinted pages, about 12 per cent. of the total.

No. IV. Book.

Belongs to M. 8. Found at Kiang Tūz Size, $12\frac{1}{2} \times 8''$. Number of forms, 20. Paper, variety III*d*. One outer form damaged by burns; entire surface of all leaves greased with fat. Riveted with three copper pegs. Printing commences, contrary to the usual rule, on the second page of the first form, but stops, as usual, on the ante-ante-penultimate page. Print throughout almost illegible, owing apparently to the greasy surface of the paper.

Contains recension V*a*, printed in two columns on each page, running parallel to the longer side of the book, and containing each nine impressions of the formula; there being accordingly 18 impressions on every page. On some pages the columns are printed both upright; on others one column stands upright, the other reversed. Thus

Page 16.		Page 17.		
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(1)
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(2)
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(3)
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(4)
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(5)
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(6)
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(7)
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(8)
a b c d	*a b c d*	*a b c d*	*p ɔ q v*	(9)

These two arrangements seem to have been observed quite promiscuously; thus: on 1st form upright and reversed throughout,
on 2nd „ upright throughout,
on 3rd „ upright on 3rd page only,
on 4th „ upright on outer pages only,
on 5th „ upright on two first pages only,
on 6th „ upright on outer pages only,
on 7th „ upright on inner pages only,
on 8th „ do. do. do.,
on 9th „ do. throughout, etc., etc.

On those pages where the impressions are placed in opposite directions, it is always the left-hand sides of the formula (as seen on Plate

XII) which stand in the middle of the page, adjoining each other. The right-hand sides are near the outer and inner edges of the page; and as the space is rather limited, occasionally the terminal letters on those sides are omitted.

No. V. Book.

Belongs to M. 8. Found at Kiang Tūz. Size, 13×8″. Number of forms, 20. Paper, variety III*d*. Entire surface of all leaves greasy; no burns; the two outside leaves slightly damaged. Print throughout rather difficult to read. Riveted with two copper pegs only. The first (or covering) form is wrongly folded.

Contains recension V*a*, printed in two columns on each page, which run in right angles to each other, the inner parallel to the longer, the outer parallel to the shorter side of the book. The former consists of ten (exceptionally nine) impressions of the formula, the latter of six, arranged in two lines; the total number of repetitions on every page being 16 (exceptionally 15). The inner columns stand regularly upright and reversed on alternate pages. The outer columns, as a rule, have the third line of the formula (as shown in Plate XII) turned towards the inner column; but on 21 pages (out of a total of 76) the formula is turned the other way, being probably misprints. The two positions are shown in the subjoined diagrams.

Regular.

a b c d a b c d a b c d	p ɔ q v p ɔ q v p ɔ q v
a b c d a b c d a b c d a b c d	p ɔ q v p ɔ q v p ɔ q v p ɔ q v
a b c d a b c d a b c d	p ɔ q v p ɔ q v p ɔ q v

Exceptional.

a b c d a b c d a b c d	p ɔ q v p ɔ q v p ɔ q v
a b c d a b c d a b c d a b c d	p ɔ q v p ɔ q v p ɔ q v p ɔ q v
a b c d a b c d a b c d	p ɔ q v p ɔ q v p ɔ q v

No. VI. Book.

Belongs to M. 8. Found at Kiang Tūz. Size, 13×8½″. Number of forms, 20. Paper, variety III*d*. All surfaces more or less greasy; a few burns; large piece torn out of the fourth leaf. Print indifferent, and rather difficult to read. Riveted with two copper pegs only.

Contains recension V*a*, the arrangement of which is exactly the same as in No. V, except that the inner column consists, as a rule, of nine, and only exceptionally of ten impressions of the formula.

No. VII. Book.

Belongs to M. 8. Found at Kiang Tûz. Size, $16\frac{1}{2} \times 7''$. Number of forms, 20; some of them worn through at the back into separate leaves. Paper, variety III*d*. Fairly clean and well preserved. Riveted with three copper pegs.

Text printed in one column on each page, running parallel to the longer side of the book, and consisting of twelve impressions of the formula. As a rule the columns stand upright and reversed on alternate pages, there being only 13 exceptions (in a total of 74 printed pages), probably misprints.

No. VIII. Book. (Plate XI.)

Belongs to G. 7. Size, $8\frac{1}{4} \times 5\frac{1}{2}''$. Number of forms, 32. Has exceptionally seven blank pages both at the beginning and end of the book; that is, printing commences on the 8th page from the beginning, and stops on the 8th page from the end. Paper, variety III*b*. Book in rather bad preservation, and print so faint as to be illegible in many pages. Bound with two twists of paper.

Contains both recensions, V*a* and V*b*, but the latter only on the outside pages of forms 5, 6, 7, 15, 16, 19, 21, 22, 30, and on the inside pages of forms 14, 23, 29,[17] also on the first (outside) page of form 24; altogether on 25 only out of a total of 114 pages. Curiously enough on the fourth (outside) page of the 24th form there are printed two formulas of the First Set.

Both recensions are printed in two columns on each page, running parallel to the narrower side of the book, and consisting each of three (very exceptionally four) impressions in the case of recension V*a*, and of two (exceptionally three) impressions in the case of recension V*b*. The space is not sufficient for the exceptional number of impressions; accordingly in those exceptional cases one or two lines, from either extremity, are omitted. As a rule the columns stand turned in opposite directions on alternate pages, as shown in the margin.

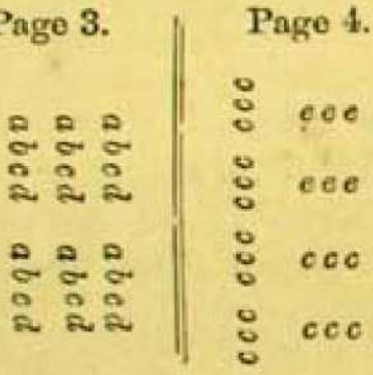
abcd abcd abcd ‖ *pcqa pcqa pcqa*

pcqa pcqa pcqa ‖ *abcd abcd abcd*

Page 4 of form 24 is a curiosity. It is shown on Plate XI. The leaf is badly damaged by burns. On one side (page 3) it shows the formula of the Fifth Set in the usual arrangement of two columns, with two impressions in each, running parallel to the narrower side of the book. On the reverse side (page 4) formulas C and E, in the recensions I*g*

[17] These too become outside pages, if the fold of the forms is turned the other way.

and I*h* respectively, of the text of the First Set are imprinted, arranged in two columns, at right angles to one another, one running parallel to the longer, the other with the shorter side of the book. The former stands near the outer, the latter near the inner edge of the page. The outer column consists of two impressions each of the recensions I*g* (ll. 9, 11, 13, 14) and I*h* (ll. 17, 18, 19); while the inner column consists of four impressions of the recension I*g*. The two pages are shown in the marginal diagram, the formula of the Fifth Set being indicated by *a b c d*, and those of the First Set, by *ccc* (=C=I*g*) and *eee* (=E=I*h*) respectively. The circumstance of the two mutilated formulas of the First Set appearing here in this unexpected and purposeless way seems to render the hypothesis of a forgery almost impossible, both with regard to the whole book No. VIII, and to the blocks for the recensions I*g* and I*h*.



Sixth Set. (Plate XIII and Pl. XIV, fig. 1.)

This Set comprises three books. Its peculiarity is that it is not appropriated to one particular text only, but presents a collection of several texts. What was found occasionally as a rare exception in the other sets—the introduction of a few impressions of an alien text into the midst of its own proper one—forms in the Sixth Set its main feature.

Of the three books comprised in it, No. I gives the texts of the Second and Fifth Sets. No. II gives the texts of the Second, Fourth and Fifth Sets, and No. III those of the First, Second, Fourth and Fifth Sets.

No. I. Book. (Plate XIV, fig. 1.)

Belongs to M. 7. Found at Aq Talā Tūz. Size, $11 \times 8\frac{1}{2}$". Number of forms 30. Paper, variety III*b*. Greatly damaged by exposure to wet; also some large fatty stains and burns. Print almost illegible. Bound with three nails; guards being large rhomboid pieces of flat, thin, ornamental copper, as shown in fig. 1 of Plate IV.

As a rule, the pages of this book present the texts of the Second and Fifth Sets. There are only 6 exceptional pages (out of a total of 114 printed ones), *viz.*, 6, 43, 94, 95, 116, 117, which give the text of the Fifth Set alone.

The text of the two sets are printed in three columns on each page, running parallel to one another and to the longer side of the

book, and standing upright and reversed on alternate pages. It may be also noted that what has been indicated in the facsimiles (Plates X and XII) as the first line of the formulas of the two texts, stand, as a rule (though not always), alongside of one another, pointing to the conclusion that these two lines occupy the same position in the respective formulas, that is, that both are the head-lines (as assumed in the facsimiles) or both the foot-lines. Of the three columns one gives the text of the Fifth Set, and two give that of the Second Set.

The column containing the text of the Fifth Set always occupies the inner side of a page, and consists of seven, or more usually eight, impressions of the formula of that set. But as the space is barely sufficient to accommodate all eight, one line of the 8th repetition is often omitted; this seems to be invariably line 3, as indicated in the facsimile (Pl. XII); which fact also points to line 1 being really the head-line.

The two columns containing the text of the Second Set, always occupy the outer side of a page, and consist each of four impressions of the formula, so that there are altogether eight impressions of it on each page. The formula here printed is only a portion of the text of the Second Set, *viz.*, formula C, or lines 9–13 of column I of that text (Pl. X).

There is one exception to the arrangement above explained. On p. 7 there are only two columns, standing at right angles to each other, the outer one of which consists of four impressions of the text of the Second Set. The two arrangements are shown in the subjoined diagram; *a b c d e f* denoting the text of the Fifth Set, and *1 2 3 4 5 6* that of the Second Set.

Regular.		Exceptional.	
(1) *abcdef 123 123*	(1, 2)	(1) *abcdef* 4 5 6	(1) 1 2 3
(2) *abcdef 456 456*		(2) *abcdef* 1 2 3	
(3) *abcdef 123 123*	(3, 4)	(3) *abcdef* 4 5 6	(2) 1 2 3
(4) *abcdef 456 456*		(4) *abcdef* 1 2 3	
(5) *abcdef 123 123*	(5, 6)	(5) *abcdef* 4 5 6	(3) 1 2 3
(6) *abcdef 456 456*		(6) *abcdef* 1 2 3	
(7) *abcdef 123 123*	(7, 8)	(7) *abcdef* 4 5 6	(4) 1 2 3
(8) *abcdef 456 456*		(8) *abcdef* 1 2 3	

The correspondence in the arrangement of the texts of the two sets suggests that they may also correspond in their scripts and their meaning. We should have here a bi-script, and perhaps a bi-lingual, book.

No. II. Book.

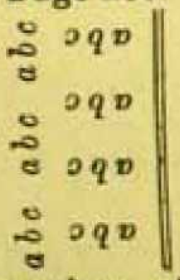
Belongs to M. 7. Found at Aq Talā Tūz. Size, 11×8″. Number of existing forms 28; but originally it must have been 30, as the two outside forms, forming the covers, are missing. Paper, variety III*b*. Corners rounded off, somewhat similar to those of book No. VIII of the First Set. Condition similar to that of No. I. Bound with three twists of paper.

Contains the text of the Second, and Fifth, as well as that of the Fourth Sets; on alternate forms; commencing with the latter. That is, the text of the Fourth Set is found on forms 1, 3, 5, etc.; that of the Second and Fifth Sets on forms 2, 4, 6, etc.

The latter texts, on their own forms, are arranged exactly as in book No. 1; only as the space is insufficient, a portion of those impressions of the formula (C) of the Second Set, which are nearest the outer edge of the page, is omitted; on two pages (93 and 96) they are omitted altogether.

The text of the Fourth Set is printed in three columns on each page, running parallel to the narrower side of the book, and consisting each of two impressions of the formula which accordingly is repeated six times on every page. The columns keep throughout the same direction. In fact the arrangement of the text is exactly the same as in No. IV of the Fourth Set; see the diagram on p. 87. There are, however, four exceptional pages. On page 107 there are two columns, each consisting of four impressions of the formula (altogether eight repetitions), and running parallel to the longer side of the book. On pages 81 and 84, the arrangement is the same, except that there is only one column in the middle of the page. On page 106, as shown in the marginal diagram, the two arrangements are combined, there being two columns standing at right angles to each other, the outer consisting of three, the inner of four impressions of the formula, and running parallel to the shorter and longer sides of the book respectively.

Page 106.



No. III. Book. (Plate XIII.)

Belongs to M. 8. Found at Kiang Tūz. Size, 13×11″. Number of forms uncertain, as the outside leaves are missing, the book, in its present condition, beginning and ending with a printed page; but the existing number of leaves is 81. Paper, variety III*c*. Many of the leaves torn, and otherwise damaged by fatty stains and burns. Print often barely legible. Bound with three twists of paper.

Contains the texts of the First, Second, Fourth, and Fifth Sets. Those of the First and Second Sets never occur complete. Portions of them only are found, and always standing separately. Of the First Set the formulas I*f*, I*g*, and I*h* (*i.e*, A, C, E mutilated) only are found; of the Second Set only the formulas A, B, D and E. In the distribution of these texts, no particular order is observable. Sometimes the text of a set occupies a whole page by itself; at other times, two or three (never all four) texts are combined on one page. This will be best seen from the Table of analysis of the pages, given below.

If a single text occupies a page by itself, it is always printed in 3 to 5 columns, generally running parallel to the longer side of the book, and consisting of 4 to 6 impressions of the formula, according to the size of the latter. See below the diagrams of pages 8, 9, 11, 12, 59, 60. If a single text occupies several consecutive (from 4 to 12) pages, the columns always stand upright and reversed on alternate pages.

If several texts together occupy the same page, they are arranged in the most varying order. No principle that may have guided the printer is observable. The subjoined diagrams illustrate this; the arrangements shown are only a few out of a much larger number. The formulas of the Fourth and Fifth Sets are indicated by *a b c* and *1 2 3* respectively; those of the First and Second Sets by I*f*, I*g*, I*h*, and A, B, D, E respectively.

Page 4.

A I*f* A I*f* A I*f* A I*f* A I*f* A I*f* A I*f* A I*f*

Page 5. (Pl. XIII.)

I*g* I*f* I*f* I*h*
I*g* I*f* I*f* I*h*
I*g* I*g* I*g* D I*h*
I*g* I*g* I*g* I*h*
I*g* I*g* D I*f* I*h*
I*g* I*f* I*h*
I*g* I*f* I*h*

Page 6.

I*h* I*f* I*f* I*f*
I*h* I*f* I*f* I*f*
I*h* I*f* I*f* E I*f*
I*h* I*f* I*f* I*f*
I*h* I*f* I*f* I*f*
I*h* I*f* I*f* I*f*
I*h* I*f* I*f* I*f*

Page 7.

I*g* I*g* I*g* I*g* I*g*
I*g* I*g* I*g* I*g* I*g*
I*g* I*g* I*g* I*g* I*g*
I*g* I*g* I*g* I*g* I*g*
I*g* I*g* I*g* I*g* I*g*

Page 8.

*f*I *f*I *f*I *f*I *f*I
*f*I *f*I *f*I *f*I *f*I
*f*I *f*I *f*I *f*I *f*I
*f*I *f*I *f*I *f*I *f*I
*f*I *f*I *f*I *f*I *f*I
*f*I *f*I *f*I *f*I *f*I

Page 9.

I*f* I*f* I*f* I*f* I*f*
I*f* I*f* I*f* I*f* I*f*
I*f* I*f* I*f* I*f* I*f*
I*f* I*f* I*f* I*f* I*f*
I*f* I*f* I*f* I*f* I*f*
I*f* I*f* I*f* I*f* I*f*

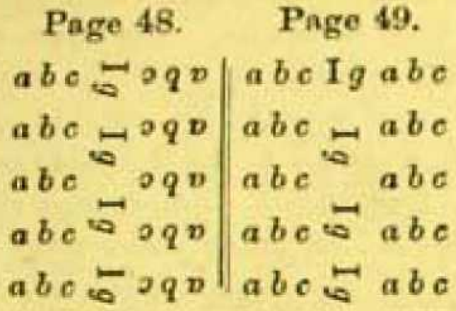
Page 11.

a b c a b c a b c
a b c a b c a b c
a b c a b c a b c
a b c a b c a b c

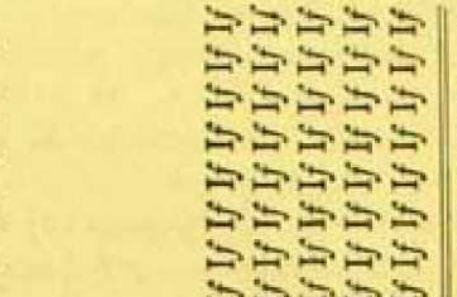
Page 12.

ɔ q ɒ ɔ q ɒ ɔ q ɒ
ɔ q ɒ ɔ q ɒ ɔ q ɒ
ɔ q ɒ ɔ q ɒ ɔ q ɒ
ɔ q ɒ ɔ q ɒ ɔ q ɒ

Page 48.

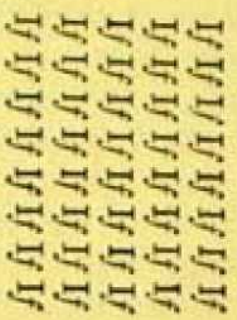


Page 49.

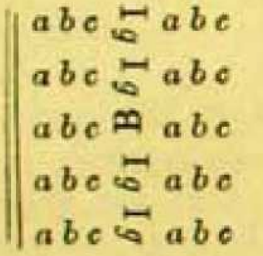


Page 59.

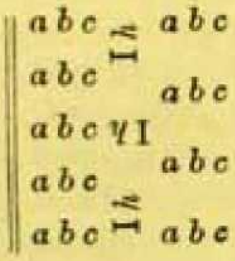
Page 60.



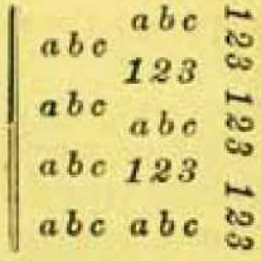
Page 47.



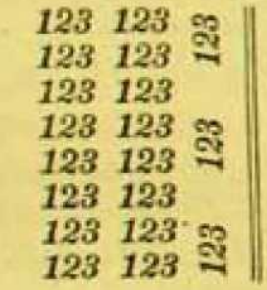
Page 91.



Page 139.



Page 140.



Page 163.

Page 164.

I have taken the trouble to analyse the whole of the pages with reference to the frequency of occurrence of the several formulas and their combinations. The result is shown in the subjoined Table. The formulas of the Second Set (A, B, C, D), except where stated otherwise, occur only once on the page.

Formulas.	Pages of Occurrence.	Frequency.
Sets IV.	11–18, 23–27, 30, 39–42, 51–58, 67–70, 75–82, 87–90, 92, 94, 99–102, 107–118, 131–134, 140–150, 155–162 Total	80
Set V	28, 29, 140, 141	4
Sets IV and V	139, 142	2
Set IV and Set I*g*	48, 49	2
Set IV and Set I*h*	91	1

Formulas.	Pages of Occurrence.	Frequency.
Sets IV, IIA and I*f* ...	93	1
Sets IV, IIB and I*g* ...	47, 50	2
Sets IIA and I*fh* ...	3	1
Sets IIA and I*fgh* ...	97, 163 (a row of A on 163) ...	2
Sets IID and I*fh* ...	95, 98, 151 ...	3
Sets IID and I*fgh* ...	5 (D twice), 153 (D thrice) ...	2
Sets IIE and I*fh* ...	2	1
Sets IIE and I*fh* ...	6, 152, 154	3
Sets IIE and I*fgh* ...	96	1
Sets IIAE and I*fh* ...	4 (E once, two rows of A) ...	1
Sets IIAE and I*g* ...	164 (E once, row of A) ...	1
Set I*f* ...	8, 9, 43–46, 59–62. ...	10
Set I*g* ...	7, 10, 19–22, 35–38, 63–66, 83–86, 103–106, 119–130, 135–138 ...	38
Set I*fh* ...	31, 33, 71–74	6
Set I*fgh* ...	1, 32, 34	3
	Total pages ...	164

The combination of formulas in different scripts on the same page seems to suggest some sort of correspondence or identity. It is difficult, however, to fit the varieties of the combinations into a consistent theory. Possibly this may be due to misprints. Provisionally I would suggest the following theory. Books Nos. I and II seem to show that the formulas of Set IIC, Set IV, and Set V correspond to one another. Now pages 47–50 show formulas IV and I*g* in combination; and it may be also noted that these two particular formulas occur most frequently by themselves in book No. III; *viz.*, formula IV, 80 times, and formula I*g*, 38 times. Assuming that formula I*g* is equal to formula IV, the combination on page 2 (*viz.*, II E and I*fg*) would tend to identify formula I*f* with formula II E. Consequently the combination of formulas II A and II E with formulas I*f* and I*h* on page 4, would identify formula I*h* with formula II A; and in corroboration of this equivalence it may be noted that on pages 4 and 163, there are whole columns of II A and I*h* corresponding with each other. At the same time this theory does not seem quite consistent with the combination of the formulas I*f*, II A, and IV, on page 93. As formula IV is assumed to be equal to formula I*g*, it seems to follow that I*f* = II A; and with this conclusion agree the two facts that on page 4 the formulas I*f* and I*h* are combined with the formulas II A and II E, and that on pages 4 and 163 columns of II A correspond to columns

of *If*. In fact, these two facts fit in equally well with both theories. The result accordingly would be

formulas IV = V = II C = I*g*;
I*f* = II E or = II A;
I*h* = II A or = II E.

Seventh Set.

This Set comprises six books. The text contained in it consists of seven lines. The dimensions of its block cannot be given, as no traces of any enclosing lines are seen in any of the books. The dimensions of the text itself are about $3\frac{1}{2} \times 3\frac{3}{4}''$.

With regard to the question what is top and bottom, right and left, beginning and end of the formula, the following circumstances may be noted. In book No. 1, about one-half of the formula, divided horizontally, is occasionally found; similarly in book No. IV, also about one-half of it, but divided vertically, is occasionally met with. The two halves that are thus found are invariably the same. On the assumption that, if only a portion of the formula could be accommodated, the printer would naturally choose to print its initial portion, it follows that the two halves, between them, accurately define the corner which contains the beginning of the formula. This is the upper left corner or the upper right corner, according as one has to read the lines of the formula in the European or the Chinese fashion. In the facsimile on Plate XIV, the formula is represented in the position conforming with the view here explained. The argument, however, is by no means, conclusive, as it pre-supposes that the books were intended for intelligent reading, not merely for the mechanical turning of pages.

Another point that may be worth noticing is that some of the letters of the formula of this Set and of that of the Fourth Set show considerable similarity.

No. I. Book. (Plate XIV, fig. 2.)

Belongs to M. 9. Size, $17\frac{1}{4} \times 6\frac{1}{2}''$. Number of forms, 20. Paper, variety III*d*. Well preserved; no burns; but paper greasy, and print rather indistinct. Bound with three twists of paper.

Text printed in one column on each page, running parallel to the longer side of the book, and containing, as a rule, four impressions of the formula. This arrangement allows a wide margin at the top and bottom of each page; accordingly on a few exceptional pages (about half a dozen) a half-impression is added to fill up the blank space. As this is always the same half-impression (*viz.*, lines 1–3 or 1–4), it may possibly indicate the beginning of the formula; and I have so used it

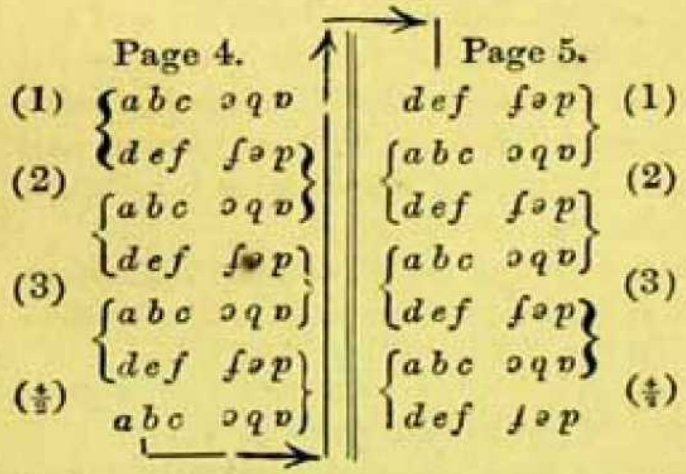
for the arrangement of the formula on Plate XIV; but the argument only holds good, if the book was intended for reading, which is doubtful. As a curiosity I may note the arrangement on page 1 of form 8; I have not noticed it elsewhere. Between the 3rd and 4th impression of the formula, there is inserted an impression of the first line by itself. This is probably a mere misprint; though it is not quite easy to understand how it happened. For as the uniformity of the intervals of the lines shows, these lines were not printed each by itself; on the other hand, if the block was twice applied to the paper, in different places, the paper should show smudges of ink, which it does not do.

The columns stand regularly, without any exception, upright and reversed on alternate pages.

No. II. Book.

Belongs to M. 8. Found at Kiang Tūz. Size, 14×9″. Number of forms, 12. Paper, variety III*d*. Surfaces greased, and print rather indistinct; otherwise well preserved. Riveted with three nails.

Text, printed in two columns on each page, running parallel to the longer side of the book, and standing alternately upright and reversed on the same page, but keeping the same position on alternate pages, as shown in the diagram on the margin. Each column consists of four impressions (*a b c d e f*) of the formula, but as the space is barely sufficient to accommodate them, not unfrequently one or two lines of the formula are omitted at the top or the bottom of the page; and, whenever this occurs, the mutilated portions are arranged so as to make up, between them, a complete formula. The intention, evidently, seems to be that the left hand columns and the right hand columns respectively should be read consecutively throughout the book, as indicated by the arrows in the marginal diagram. The four impressions are placed so as to keep the corresponding lines as much as possible on a level with one another.



No. III. Book.

Belongs to M. 8. Found at Kiang Tūz. Size, $12\frac{3}{4} \times 8\frac{1}{4}$″. Number of forms, 20. Paper, variety III*d*. Surfaces greased, and print rather

indistinct; otherwise well preserved. Bound with three twists of paper. Printing stops on the penultimate, but begins, as usual, on the fourth page.

The arrangement of the text is exactly the same as in No. II, except that the columns only consist of three impressions of the formula, whence a wide margin is left at the top and bottom of every page. There are, however, four exceptional pages, probably misprints, on which the columns run in the same direction.

No. IV. Book.

Belongs to M. 8. Found at Kiang Tūz. Size, $13 \times 8\frac{3}{4}''$. Number of forms, 20. Paper, variety III*d*. Surfaces greasy, and print rather indistinct; otherwise well preserved. Bound with two nails.

Text printed in three columns on each page, running parallel to the narrower side of the book, and consisting each of two impressions (*a b c d e f*) of the formula. The columns, as a rule, run in the same direction (*e.g.*, pp. 4, 5); but there are many exceptions (*e.g.*, pp. 8, 9), as shown in the subjoined diagram.

Ordinary.

Page 4.

abc abc abc	abc abc abc	
def def def	def def def	

Page 5.

abc abc abc	abc abc abc	
def def def	def def def	

Exceptional.

Page 8.

fap fap fap	fap fap fap	
aqa aqa aqa	aqa aqa aqa	

Page 9.

abc abc abc	abc abc abc	
def def def	def def def	

The three columns do not fill up the whole available space; there is a wide margin on both sides. Accordingly on 14 pages (out of a total of 74 printed ones) a half-column is added, consisting of two half-impressions of the formula divided vertically. As a rule, this half-impression stands on the margin of the same side, but on page 16, shown on the margin, it stands once on the left, and once on the right margin. As it is invariably the same half of the formula, this circumstance might be considered to indicate the side with which the formula commences; and I have used it for that purpose in arranging the facsimile on Plate XIV. But, as already observed, the argument is not altogether conclusive.

Page 16.

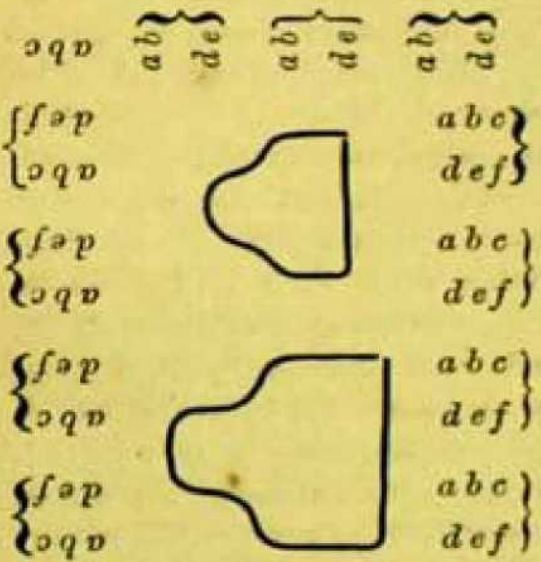
(1)	ab	abc	abc
	de	def	def
(2)	abc	abc	abc
	def	def	def
(3)	abc	abc	ab
	def	def	de

No. V. Book.

Belongs to G. 10. Size, 17½ × 14″. Number of forms, uncertain, as they are all cut through, along the folds, into separate leaves; the latter number 41; but possibly one leaf is torn off. One of the existing outside leaves is torn in shreads. Paper, variety IIIb. Surfaces greasy, and print indistinct; otherwise fairly well preserved; no burns. Printing commences on the second, and ends on the penultimate page of the now existing leaves. Riveted with three nails, the guards being round pieces of copper resembling coins, like fig. 4-9 on Plate IV.

Text printed in three columns on each page, running parallel to the longer side of the book, and consisting each of four impressions of the formula, which, accordingly, is repeated 12 times on every page. The columns stand upright or reversed on different pages; but there is no perceptible order in this respect.

Page 44.



On one of the pages of the 22nd leaf, there is seen the sketch of a man's bust, twice repeated side by side, one somewhat smaller than the other. See Plate XVIII. They were evidently sketched on the page, before the formula was printed around them, as the arrangement of its impressions is adjusted to the sketches, running regularly round them. The sketches are placed horizontally across the page, as indicated by the two figures in the marginal diagram.

No. VI. Book.

Belongs to G. 8. Purchased for Rs. 45. Size, 22 × 13″. Number of forms, 43. Paper, variety IIIc. Rather clean, but many leaves torn, on account of large size and flimsiness of paper. Print not very distinct. Riveted with three nails, the guards being regular oblong pieces (1½ × 1¾″) with rounded corners, showing embossed head and symbols, as seen in fig. 1 of Plate IV.

Text printed in three columns on each page, running parallel to the longer side of the book and consisting each of six impressions of the formula. They stand, as a rule, upright and reversed on alternate pages.

EIGHTH SET. (Plates XIV, fig. 3 and XV, fig. 1.)

This set comprises only one book. It belongs to G. 9. It was purchased by Sayyid Gul Muḥammad, a well-known Kashghar merchant, for forty rupees and was sent, as a present, to Captain Godfrey. The book, of course, could not be accepted as a present, but it was purchased on behalf of the British Government. It measures $11 \times 6\frac{1}{4}''$. The exact number of its forms is unknown, for the beginning and end are missing, and a large number of leaves exist only in fragments. The number of still complete forms is 29; most of these even are more or less damaged along the edges. The book is bound with three copper nails, and the guards are formed of two thin copper slips, measuring $8 \times \frac{3}{4}''$, and covered with ornaments like those on figs. 4–9, Plate IV.

Irrespective of its script, this book strikingly differs in several points from the books comprised in all the previously described seven sets. In the first place, it is clean; there is no trace of any burn or fatty stain. In the second place, the paper, to all appearance, is of an entirely different quality. It is thin and soft and more nearly resembles the paper of the Weber and Macartney Manuscripts procured from Kuchar. It differs, however, from their paper in colour; for while their paper is white or whitish, the paper of this book is of a bright yellowish-brown. It looks as if it were artificially tinted; but the colouring, if any, is fast, for it is tolerant of washing. It is a pity that its find-place is not known; but that it comes from some spot in the Takla Makan is shown by the fact of all its leaves being, like those of all the other blockprints, very thickly covered with the fine yellow sand of the desert. Another curiosity is that a small special formula, which occasionally occurs in it, is printed with an apparently faded, red-coloured fluid, which almost resembles blood. Its ordinary formula is, as usual, printed with black ink. Minor peculiarities are the following: (1) most of the existing leaves show a clean cut on one of the narrow sides, (2) two of the pages have the text printed diagonally across them, and (3) a few leaves are only printed on one side. The last mentioned peculiarity is due to the extreme thinness of the paper, owing to which the print on one side shows through on the other. The leaves have, as in the case of all other block-printed books, frayed edges, but in the present case one of the narrower sides of most leaves has been clipped with a sharp knife or scissors, for it shows a clean cut, which occasionally passes right through a line of print, showing that the clipping was not done with little care.

The text of the book consists of two formulas which I shall call VIII *a* and VIII *b*. The formula VIII *a* consists of three long lines, containing apparently about 16 letters each. It is the proper formula

of the book, as it covers every printed page but one. Formula VIII *b* is evidently a special one; it is very small, consisting of four lines, of 2, 3, 3 and 6 letters; and it is only found on a very few pages. On one page it is found twice, printed in the middle and at the top of it, the rest of the page being filled with the ordinary long formula VIII *a*. On two other pages it is found similarly at their top; and lastly there is one leaf, on which it occupies the entire surface of both pages. Curiously enough this is an isolated leaf, which is stuck in between the two leaves of a folded form. But from the page which exhibits the double imprint of formula VIII *b* (see Plate XV, fig. 1) it is evident, that both formulas were printed at the same time; for the needful space (though only just barely sufficient) is purposely left for formula VIII *b* between the impressions of formula VIII *a*.

The latter formula is printed ten times in a column on each page; the column running parallel to the longer side of the book. Within the column the impressions of the formula stand, as a rule, upright and reversed alternately; though occasionally two upright or two reversed impressions follow consecutively, as may be seen on the facsimile page in Plate XV, fig. 1.

Formula VIII *b* is also printed in a column consisting of ten lines of impressions; but each line itself is made up of four impressions, standing alternately upright and reversed; so that the formula is repeated 40 times on each of the two pages of the leaf the surface of which it entirely occupies. On all other occasions (as on the facsimile page) where formula VIII *b* occurs, it only occupies one line consisting of four impressions.

Among the fragments, found by me with the book there are two, which have a peculiar interest in bearing, in addition to the ordinary formula VIII *a*, a second small text, which I shall call formula VIII *c*. One of the fragments consists of a very narrow oblong sheet, folded in the middle into two leaves. Each of these leaves (see fig. 3 on Plate XIV) measures $6\frac{1}{8} \times 3''$; and shows a clean cut along either of its long sides. As these sides measure exactly the same as the breadth (or narrow side) of the book; it seems probable that the whole oblong sheet is simply a slip cut out of one of the forms of the book. And seeing that the slip is nearly blank on one side, it is further probable that the form, from which it was cut, was one of the outside, or covering, forms of the book which are now missing. The other piece is of a very irregular rhomboid shape, being apparently a piece torn off one of the leaves of one the outside forms of the book; for it shows on one side three full and one fragmentary imprints of the ordinary formula VIII *a* in the usual column arrangement, while the

other side must have originally been blank, but is now covered with imprints of formulas VIII *b* and VIII *c* in a promiscuous and disorderly way.

Ninth Set. (Plate XV, figs. 2 and 3, and Pl. XVI.)

This set comprises two items, a roll and a book. The latter, when received, was enclosed in a carved wooden box; and the former probably was also originally within it. The whole belongs to G. 10. It was received by Captain Godfrey from Leh, and is said to have been dug out in the Takla Makan, which, seeing that it is more or less thickly encrusted with the fine yellow sand of the desert, is probably correct. But it is a pity that the exact find-spot is not known.

No. I. The Box.

The box (Pl. XV, fig. 2) has a height of $4\frac{1}{8}''$; its diameter externally is $4\frac{1}{4}''$, and internally, $3\frac{1}{2}''$; inclusive of the projecting carved figures, its breadth is $4\frac{3}{4}''$. It is drilled out of one piece of wood, and is ornamented with six carved projections, which run, like pillars, round it parallel with the length of its wall, and at equal distances (about 1") from one another, and consist alternately of standing human figures and inscribed boards. Close to one of the figures, there is a crack right through the wall of box, gaping asunder about $\frac{1}{4}$ of an inch. Above the head of the next figure to the right, there is a large semi-circular notch cut into the rim (shown on Pl. XV), and there is also a smaller triangular one over the inscribed board which stands between those two figures. These notches seem to have been made intentionally. There are also two small, irregular holes in the wall (one shown on Pl. XV), nearly opposite to each other, but these appear to be due to injury. There is no lid to close the box; nor do appearances point to its ever having had any. The projections go down to the bottom of the box, but do not reach quite to the edge of the rim, being short of it by $\frac{3}{8}$ of an inch.

Of the three human figures, one is represented with his arms a-kimbo, his hands resting on his abdomen (shown on Pl. XV), while the other two figures have their arms hanging down straight by their sides. There are some similar crude figures of copper in the collection, which will be described in the section on Miscellaneous Objects. All three figures on the box appear to be represented nude. Two of them (including the one with the arms a-kimbo) bear curious lines marked regularly across both sides of the chest and upper arms. They might be intended to denote a short jacket; but similar lines are used to mark the hair on the heads of all three figures. This hair is marked very regularly, long hair with a parting in the middle. One of the figures—

he with the arms a-kimbo—has also a beard, marked by similar lines all round the lower part of the head. The other two are represented beard-less. The heads are made disproportionately large; and altogether the figures are very crude.

The three bands (Pl. XV, fig. 3) of writing are oblongs, measuring about $3\frac{3}{4} \times 1''$. One of them is divided, by indented lines, into three nearly equal compartments. Their top and bottom seem to be clearly indicated by their correspondence to the heads and feet of the figures. They are shown on the Plate in the position thus indicated. Accordingly the legend of No. II which consists of two lines containing each six symbols must be read either from top to bottom, or from right to left. The legend of No. I appears to consist of a narrow column of nine short lines, each containing three or four symbols. The three compartments of No. III seem to contain 3, 2, 3 short lines respectively. The probability seems to be that all the legends run from the right to the left.

On Plate XV, fig. 4 I show an inscription which exhibits a curious *primâ facie* resemblance to the writing on the bands. This inscription stands on a hone of slate, measuring $5 \times 1''$. It was found at Mazyhund, close to Tiran, at the foot of Mahaban in the Swat country, and brought to Major Deane, who very kindly gave it to me to be added to the British Collection of Central Asian Antiquities.

No. II. The Roll. (Plate XVI).

The roll measures $16\frac{3}{4}$ by $4\frac{3}{8}$ inches. The paper is very different in texture from that of the block-prints books comprised in Sets I to VIII. It is exceedingly thin, tough and hard; it is also oiled or greased, apparently as a kind of sizing, to tolerate being printed on. When washed, it shows a very light yellowish or creamy tint. In general appearance it resembles thin parchment. It is only printed on one side, the paper being so thin that the print of one side shows through on the reverse, wherever there is an excess of ink, as in lines 8–11, 30–33, 38, 39. For that reason, clearly, the ink was, as a rule, put on very sparingly, so that in many lines the print is so fine as to be almost illegible.

The roll is covered with 45 lines of print, which run parallel to its narrow sides, and which contain each from 13 to 15 symbols. A closer inspection reveals the fact that this text of 45 lines consists of five formulas, which are repeated at irregular intervals, and each of which comprises two lines of the text. I shall distinguish these five formulas as IX^1, IX^2, IX^3, etc. The two lines of the several formulas are made up of a number of symbols varying from seven to fourteen. Sometimes, as in lines 8 and 9, which comprise formula IX^4, the lines

of the formula practically coincide in length with the lines of the text. In other cases, as in lines 20 and 21, comprising formula IX^2, the lines of the formula are much shorter than those of the text. In these cases the latter lines are filled up with repetitions of the formula, in a more or less complete state.

Formula IX^1 occurs five times, in lines 2 and 3, 16 and 17, 24 and 25, 34 and 35, 44 and 45. Accordingly, considering that there are two columns, the formula is repeated ten times. In lines 2 and 3, it stands reversed; in all the other lines, it stands upright.

Formula IX^3 occurs six times, in lines 4 and 5, 10 and 11, 20 and 21, 22 and 23, 30 and 31, 38 and 39. Altogether it is repeated twelve times on the roll. This formula and the fourth are the only ones in which the symbols stand sufficiently apart to permit of being discriminated and counted. Its first line consists of eight, and its second line, of seven symbols. The second (or sixth, according as the series is read from the left or right) symbol of the latter line has a striking resemblance to the Sanskrit (Brāhmī) letter for *a*, as written in North-India about 800 A.D.; but this must be a mere accidental coincidence, as no resemblance can be seen in any of the other symbols.

Formula IX^5 occurs three times, in lines 6 and 7, 12 and 13, 14 and 15. The number of symbols comprised in its two lines is uncertain; probably 11 and 13 respectively.

Formula IX^4 occurs twice, in lines 8 and 9, 32 and 33. Both lines appear to consist of eleven symbols.

Formula IX^5 occurs six times, in lines 18 and 19, 26 and 27, 28 and 29, 36 and 37, 40 and 41, 42 and 43. In the two pairs of lines 18, 19 and 26, 27 it stands reversed; in the other four pairs it stands upright. The two lines appear to comprise 12 and 14 symbols respectively.

No. III. The Book.

Belongs to G. 10. Size $6 \times 4\frac{1}{4}''$. Number of forms $34\frac{1}{2}$; many cut into separate leaves; number of leaves 69. No blank covers. Many leaves torn. Paper rather brittle, and of the same kind as that of the Roll No. II. Stitched with four loops of thread.

Contains the identical text of the roll; as a rule, arranged in columns, running parallel to the narrower side of the book; but on a few exceptional pages, they run parallel with the longer side. As in the roll, the formulas are repeated at irregular intervals, two or three formulas being found repeated on each page.

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I.—*Some Khond Songs.*—*By* J. E. Friend-Pereira. *Communicated by the Anthropological Secretary.*

[Received October 24th; Read 7th December, 1898].

The songs of the Khonds have no pretensions to poetry—that is, poetry in the sense of finished literary productions. They are composed in a rude and often ungrammatical language; they are loosely constructed, and carelessly worded, and vague in meaning; they are destitute of anything in the nature of metre or rhyme; and above all they are often a grotesque medley of the serious and the ludicrous, resulting in a frequent descent to what is known as bathos. But yet they possess a peculiar charm of their own. They are eminently true to nature; and their crude and half developed thoughts, struggling through a mist of faulty expression, occasionally afford a glimpse of high imaginings, of tender feelings, and of fanciful imagery. And when they are sung to the weirdly plaintive melodies that seem to have been caught from the sough of the wind in the gloomy depths of the forest, or the moan of the waterfall over some desolate mountain side, they reach an intensity of beauty that is enchanting.

The sentiment of love, which is probably as old as the human race, has been the subject of both poet and painter from time immemorial. To a people like the Khonds, among whom real courtship and a reciprocal feeling of affection form the preliminaries to marriage, it becomes the great topic of song. It is appropriate that a love-song should take the first place in a paper like this.*

The Wooing.

Gladden my heart,[1]
To-day is the (fateful) day.
Move your body in dance,
Here in this place.[2]
Why do you decline, my darling,
For what reason do you decline?
My love, gladden my mind,
And shed lustre on your country.
Come, little woman,
Will you take away my honour?
Come, little one,
Will you take away my reputation?
(*i.e.*, by refusing me in the presence of my friends)
A crowd has gathered together
On your account;
Groups have collected together
For your sweet sake.
With the happy eyes of a *titeri* bird
We shall see you dance;
With the happy eyes of a *jogeri* bird
We shall watch your posture.
Move the joints of your body,
Move both your arms.[3]
Your mother having given birth to you,
Dance gracefully;
Your father having produced you,
Dance rhythmically.
Come, my beloved,
I shall tie up your Pan-woven cloth round your waist;
Come, my beloved,
I shall tie up your Gond-woven cloth round your waist.[4]

[1] Gladden my 'liver,' in the original.

[2] The youth does not mean to tease his sweetheart into dancing on the spot for the entertainment of his friends. Dancing is very dear to the heart of a Khond girl; and the words convey a gentle flattery of her skill in the art, and of the pleasure she will give by leading the dance among the village girls at the proper time under the starlit skies.

[3] The essence of a Khond dance consists in posturing, and in the graceful and rhythmic movement of the different members of the body.

[4] This is the preliminary ceremony performed before a dance begins. The girls come forward bashfully, and their sweethearts, if they have any, or their

On your account
We have come ;
To fulfil your desire
We have come.
Do not behave so as to take away my honour (by refusing),
Your (intended) husband has come ;
Do not let my labour go in vain,
Your (intended) husband has come.
Bear for a little (while) my wishes on your head,
You are the millet-stalk, and I the grains you bear.
On your account
I will take a great she-buffalo,
On your account
I will take a great he-buffalo ;
Both our people will go together.
On account of my great love (for you)
I cannot leave you.
And the obstacle to our daily converse
Will be removed (*i.e.*, by your coming with me).
I cannot, will not, leave you.
On your account
I will bring a brass water-pot ;
On your account
I will bring a water-pot pulled out from the potter's wheel.
I will procure them from Tikabali
After giving silver pieces ;
I will procure them from Erabali
After giving British rupees.
Why are you afraid, little woman ?
You have a father ;
Against your being afraid
The village-father will speak to you ;
Against your being distressed
The neighbour-father will speak to you ;
They are people of another village.[1]
I will take you to my dwelling,
I will take you to my house.

brothers or cousins, proceed to unwind the cloth from their shoulder and tie it round their waist so as to leave a streamer floating behind, which wags about like a tail during the movements of the dance.

[1] The idea is 'why are you afraid. You may question the headman and villagers of my village ; they are perfect strangers to you and therefore unbiassed. They will tell you the truth that you have nothing to fear.'

I will give a large gelded pig to the village headman,
I will give a large boar to the village headman.
I will lighten the sorrow of your aunt (father's younger brother's wife),
I will kill a buffalo for a feast to your mother.
I will hold a flowered earthen jar,
I will hold a jar of liquor.
There at Kerigora
Is Chakar Sahu.[1]
At Dongolgora
I will call a meeting of the elders;
I will settle everything at the meeting,
On your account, little woman,
For your sweet sake, little woman.

At the great dances by night on the village green (which sometimes last till the grey streaks of dawn appear in the East) songs in dialogue form are sung with true bucolic abandon. From their structure these songs afford ample scope for unpremeditated digressions and amplifications to a witty youth or a pert maiden, so much so, that the text is frequently mutilated. The following is a love-song in dialogue; its merit is its true representation of human nature.

The lovers' meeting.

Youth—Come, little woman, move your shoulders in dance,
Come, my darling, move your body in dance.[2]
Maid—O youth, I have no ornaments on my ankles,
O youth, I have no rings on my fingers.
Youth—Take, little woman, and wear these rings,
Take, little woman, and wear these anklets,
Take, little woman, and wear these brass (ornaments),
Why do you refuse?—Deck yourself with brass.

[1] This is characteristic of the Khond: he has no thought of the morrow and will run headlong into debt on the slightest provocation. The idea is 'there is no anxiety on the score of money; there is Chakar Sahu in Kerigora who will lend me (at an exhorbitant rate of interest of course) as much as I require.' Chakar Sahu is still alive—a sleek, oily, old man who has retired from active business in favour of his four sons. He is a well-known money lender and liquor vendor, and is never happy unless he has a case in court. We may be able to guess the date of the composition of the song from the probability that Chakar Sahu was in the zenith of his fame about fifteen or twenty years ago.

[2] The invitation to dance seems to be a popular greeting of lovers.

Maid—O youth, strike the strings of your lute,
O youth, strike the chords of your lute,
Dear youth, I shall move my body in dance,
Dear youth, I shall move my shoulders in dance.
Youth—Come, my darling, come closer to me (*i.e.*, why are you bashful),
Come, little woman, to move your body in dance,
Why do you refuse, tell me,
For what reason do you refuse, point out to me.
Maid—O youth, will you give me pice?
Dear youth, will you give me double pice?
O youth, will you buy me *muri*?
Dear youth, will you buy me *lia*?[1]
Youth—My beloved one, say shall it be Gonda *muri*?
My beloved one, say shall it be Sasi *muri*?
(*To his companion*) Come, my companion, let us (fetch) *lia* to please her,
Come, my companion, let us (fetch) *muri* to please her.
Maid—Dear youth, why do you not give it to me,
O youth, for what reason do you not give it to me,
O youth, why are you displeased with me,
Dear youth, why are you angry with me.
Youth—Come, beloved one, let our feet step together in love,
Come, beloved one, let our hands move together in affection,
My darling, will your (worth) be lessened?
My little woman, will your (worth) be spilt over?[2]
Maid—Ah youth, let our love be twisted together like the strands of a rope,
Dear youth, let our love be entwined together like the creeper round a tree,
Ah youth, let us never be separated,
Dear youth, let us never be parted.
Youth—Little one, our bodies are matched,
Little one, our complexions are matched,
Little woman, we shall be mated,
My darling, we shall be united.
Maid—Ah youth, never let our union be dissolved,
Dear youth, never let our connection be broken,
Ah youth, let your life and my life be one,
Dear youth, let your life and my life be together.
Youth—Come, little woman, you are mine till death,
My little one, we are one till the end of our lives,

[1] *Muri* and *lia*: sweetmeat made of parched rice and molasses.
[2] The meaning is 'there is no harm in your dancing with me.'

Come, my darling, our footsteps shall be together
Little woman, we shall go hand in hand together.
Maid—O youth, my mother is calling me,
O youth, my father is calling me.
Youth—Stay, little woman, I will give you a comb,
Stay, little woman, I will give you rings.
Maid—O youth, give them to me quickly then,
Dear youth, I am going.
Youth—Take, little woman, I am going also,
Here, little woman, it is late for me also.
Maid—Give then, O youth, I hold my hand open,
Give then, O youth, place them in my outstretched hand.
Youth.—Come, let us go, little woman, it is late for me,
Come, little woman, let us both go.
Maid—O youth, you will not tell anyone I asked you for a comb,
O youth, you will not tell anyone I asked you for rings.
Youth—No, little one, I have given them of my own accord,
No, little one, I have given them as my life.
Maid—O youth, let this (meeting) remain a secret,[1]
Dear youth, let our names remain unknown,
O youth, here in this country,
Dear youth, in other lands.
O youth, tell me when will you come again?
O youth, speak to me, when will you come again?
Dear youth, give me a tender word at parting,
Dear youth, do not say anything unkind.
Youth—My little one, (you know) where the mango tree grows,
My little one, (you know) where the *nim* tree grows,
Maid—O youth, let our (meeting) remain a secret,
Here in this place.
I am going, O youth, you stay.
Youth—I am going also, you stay.

The next specimen is a dialogue between a tart tempered woman and her good-natured and rather loutish husband. There is a quiet raillery in what she says, but the vein of irony and the self-glorification are somewhat too pronounced. The argument of the song is—The husband comes to his father-in-law's house to take his shrew of a wife home. She evidently laughs at the simple fellow and refuses to go with him. But though dense

[1] The meeting between the lovers is clandestine; but as is usual among the Khonds, and the Santals also, the youth is accompanied by a friend who is in the secret.

of comprehension he possesses considerable tact: instead of attempting a war of words he calls her his queen. His wife is flattered and mollified, and consents to go with him; but womanlike she cannot refrain from wagging her tongue. Afterwards when the man acquires wealth and becomes famous throughout the land she claims all the credit of his success in life.

Husband.—Will you come or not,
You my little wife;
Will you go or not,
You my little wife.

Wife.—I shall always say 'no' to you,
I shall go to Orapa village in the jungles;
I shall ever say 'no' to you,
I shall go to Binge village in the jungles.

Husband.—If both our minds agree,
We shall carry ourselves with sense;
If both our wishes are the same,
We shall carry ourselves in love.
Let it be well, we shall build a house,
Let it be ill, we shall erect a dwelling.

Wife.—How will you ever do a wise act
While you keep your gaze fixed on me;
How will you ever do a sensible act
While you keep arguing with me.
Go and buy sense
You are always arguing with me;
Go and buy wisdom
You are always arguing with me.

Husband.—I have indeed no sense
O queen of women;
I have indeed no wisdom
O queen of the country.

Wife.—Come along with me, my dear,
I shall buy wisdom for you;
Come along with me, my husband,
I shall beg sense for you;
You do not possess wisdom,
I will bring and give it to you;
You do not know sense,
Come, I will teach it to you.

Husband.—Come, let us go, my queen of women,
What path shall we take?

Come, my queen of the country,
What road shall we go?
Wife.—If I lead the way I shall take you to the jungles,
If I go first I shall take you to the jungles.
Take an axe and now come along,
We shall go to the *Konga* hill;
Take a sickle and now come along,
We shall cut the thatching grass,
To cut the wood will you go or not?
To cut the thatching grass will you go or not?
Well come along we shall both go together.
If we wish to cut (the wood and grass) we shall do so;
If we wish to bring (the wood and grass) we shall do so.
To an ignoramus I will give (work) to dig up grass,
To a fool I will give (work) to cut grass.
I am teaching him, father,
From the time of the *biko* paddy;
I am making him understand, father,
From the time of the *tureka* paddy.
He (is) destitute of wisdom, father,
I am teaching him and keeping him;
He (is) destitute of sense, father,
I am instructing him and protecting him.
After having been instructed,
He purchased twelve kinds of wisdom;
After having been made to understand,
He purchased twenty kinds of sense.
After having been instructed, father,
He has performed works of wisdom;
After having been made to understand, father,
He has done things of sense.
After having learnt wisdom, father,
He has cut down small trees;
After having been instructed, father,
He knows how to cut down trees.
Through his exceeding sense, father,
He has worked twelve ploughs;
Through his exceeding wisdom, father,
He is working twelve ploughs.
And he has done well, father,
The inside of his house;
And he has done badly, father,
The partitions of his house.

Like the clumps of bamboo on the hill, father,
He has taken root all over the land;
Like the clumps of bamboos on the hill, father,
He has purchased the whole country.
The contemptible man, father,
Is now a mighty archer;
The puny man, father,
Now holds a brass mounted axe.
He is conquering the country, father,
The possessor of wisdom;
He is vanquishing the country, father,
The possessor of sense.
Through the four *Kambos*, father,
His reputation has dispersed;
Through the three *Kambos*, father,
His fame has spread.
He has become illustrious, father,
The widow's son;
He has become powerful, father,
The son of poverty.
He is like a curved sword, father,
His wisdom pours out (like grain) from a *visa* measure;
He is like a glittering sword, father,
His wisdom pours out (like grain) from a *tambi* measure.
He possesses all the good like a *Saheb* son;
He possesses all the bad like a *raja* son.
He is always writing with a quill from the Kite's wing;
He is always casting up accounts with a quill from the vulture's wing.
He possesses all the good like unto his own gold
He possesses all the bad like unto his own silver.

The Khonds have no national song. The main section of the great Kolarian race—the Sontals—can boast of some narrative poems (very curiously not in their mother-tongue but in an ancient Hindi dialect) recounting their origin, their wanderings in different lands, their deeds in battle, their defeats and lamentations, and their final settling down in the Sikar country in Hazaribagh. The Khonds have nothing similar. All they possess is a vague tradition that they were driven away by a stronger race from the tracts that constitute the modern Gaya District, and that they gradually found their way through Chota Nagpur and the Gondwana to the hills that form their present home. However they have a hymn that may be called national. It is an invocation to the great earth-god whose

worship was the only chain that bound together a people split up into innumerable tribes and clans at perpetual feud with each other. The original hymn that used to be sung when the ghastly human sacrifice was offered is now almost forgotten. The newer version dates from the time a buffalo was substituted for the human victim.

Hymn to the Earth-God.

(*New version.*)

Thou hast come, thou hast come, O curved-horn buffalo,
To thy death thou hast come.
This is the long wished-for day, thou hast come,
There is no *aku lia* for thee.
To-day is the fateful day, thou hast come,
There is no *gur lia* for thee.
In the days that have gone by
Thou wouldst have known *arka* [1] liquor;
In the days that will not come again
Thou wouldst have seen *kueri* [2] liquor.
O buffalo, in the days of thy youth
Thou wast yoked to a plough.
Thou hast rendered an account of the *budam khet*,[3]
Thou hast rendered an account of the *lada khet*,[4]
Of all the *khets* that thou hast wandered in.
At present through fear of the *saheb* sons
From thy shoulder we take the flesh; [5]
Through fear of the *pathan* sons
From thy cheek we take the flesh.[6]
In the country of former times
We used to bury a human being.
Do not cry out to me, O beautiful buffalo,
Do not cry out to me, O curved-horn buffalo.
As the tears streams from thine eyes
So may the rain pour down in *Asar*;
As the mucus trickles from thy nostrils
So may it drizzle at intervals;

[1] and [2] Species of millet.
[3] A deep paddy field.
[4] A shallow paddy field.
[5] An allusion to the suppression of the *Meria* sacrifice.
[6] Probably Mahomedan Sepoys were employed in the *Meria* agency.

As thy blood gushes forth
So may the vegetation sprout;
As thy gore falls in drops
So may the grains of rice form.
For the large granaries
Let a profusion of rice come in;
For the large store baskets
Let them be full to overflowing.
We have decked thee out in trappings,
A *sisu* wood yoke for thee,
For thee we have made;
A *mutanga* wood yoke for thee,
For thee we have made.
Alongside of the front door
The *dimbu* eats the yoke,
Thy yoke of *sisu* wood;
The *tutur* eats the yoke,
Thy yoke of *mutanga* wood.
O demon of the refuse heap,[1]
O demon of the dung-hill,[2]
Go you to sleep, go you to sleep.
For twenty years sleep thou,
O demon of the refuse heap;
For twelve years sleep thou,
O demon of the dung-hill.[3]
Keep illness away, keep fever away,
To you will I sacrifice a beautiful buffalo.
Do not touch the children
Be as one dead O earth-god;
Do not touch the little ones
O earth-god, O deaf, unheeding earth-god.
Holding the clappers of *gumeri* wood,
Holding the clappers of *tili* wood,
I cry over thy withers, O buffalo.
The *kakori* wheel in dance overhead on thy account;
The *sikori* wheel in dance overhead on thy account.

1 and 2 Turki Penu and Pinga Penu. It is remarkable that the Khonds know that filth and decaying refuse are the principal factors in causing epidemic diseases. And yet their villages are anything but clean.

3 There seems to be some confusion here. The principal demons are invoked at the sacrifice to the earth-god; but it is the earth-god who is implored to go to sleep for 15 or 20 years.

For thee have I constructed a roof of knotted bamboos,
For thee have I constructed a roof of cubit long bamboos.
Go away from to-day,
Go away to where the sun sets.
Farewell, I have made thee go,
I have forced thee to depart.

There is room for one more song, a quaint composition that recounts the earliest dealings of the English with the people. The names of the zealous officers Captains Campbell and MacPherson who worked so hard and successfully to put down the human sacrifice that was rife among the Khond tribes are immortalized in the song.

Song.

Sometimes of a goat, sometimes of an old man, sometimes of a *sundi*, sometimes of a verandah, the mouth is drinking liquor ! [1]

At the liquor place [2] the old men are discussing events that happened in the days gone by.

The twelve brothers having sat down are talking of olden times, and they are bantering each other on matrimonial affairs.

Thereafter having drunk liquor the *budha* [3] is talking big.

"I, and I alone, am the greatest in the land," thus speaks the *budha* of the Maliko Kuaro.

"Speakest thou thus, Maliko Kuaro, in my presence—I the lame *kurmo budha ?*" [4]

"Speakest thou thus, Maliko Kuaro, up to my very face—You the people who came after me ? "

"When I die you will obtain the sovereignty of the country—then thou canst talk big."

"Listen ! I say, O brothers and uncles, thou wilt cause terror to the people."

"After causing terror to the people thou wilt work and raise *seringa songa*." [5]

1 The idea is, every imaginable topic is discussed when the tongue is loosened over the wine cup.

2 In every Khond village there is a place set apart in the open where the convivial spirits congregate and quaff and gossip.

3 The head of the Khonds. Nati Kuaro and Nati Maliko were two brothers from whom the principal tribes trace their origin.

4 There is a tradition that the Khonds ousted the *Kurmo* from the hills. The *Kurmo* are not the same as the *Kurmis* of Behar, but a caste of earth diggers.

5 Seringa. Turmeric.
Songa. An edible *Caladium*.

"If thou dost not work thy children will die: purchase bullocks and buffaloes and ploughs."

"After raising *seringa songa* thou shalt purchase silver and gold. The *hât* is sitting in Belmuta."

"After beautifying the country purchase bullocks and buffaloes; cultivate the land."

"I am speaking—the lame *kurmo budha* is speaking."

Then when the *kurmo budha* died they divided the country and they worked.

All the crops, *deri*, *kueri*, *masa*, *kauluka*, *kusa*, *mogo*, *kontoka kudinga* they sowed.

At the time of the great Kiabon Saheb's [1] coming the country was in darkness; it was enveloped in mist.

And how was the country enveloped in mist?—there was murder and bloodshed; conflagration of villages; destruction of rice and crops.[2]

Brothers and uncles sat together and deliberated how they were to act.

While they were discussing whether they would live or die the great Kaibon Saheb came.

All the people fled in terror; the Saheb said, "brothers, uncles, fear not; Maliko Knaro come to me."

Having sent *paiks* to collect the people of the land (they), having surrounded them, caught the *meria* sacrificers.

Having caught the *meria* sacrificers they brought (them); and again they went and seized the evil councillors.

Having seen the chains and shakles the people were afraid; murder and bloodshed were quelled.

Then the land became beautiful; and a certain Mokodella Saheb[3] came.

He destroyed the lairs of the tigers and bears in the hills and rocks, and taught wisdom to the people.

After the lapse of a month he built bungalows and schools; and he advised them to learn reading and law.

They learnt wisdom and reading; they acquired silver and gold; then all the people became wealthy.

[1] In 1836 Captain Campbell was appointed Assistant to the Collector of Ganjam with a view to stamp out the human sacrifice which was rife among the Khonds.

[2] The innumerable Khond tribes were perpetually at feud with each other before the British occupation. An excellent description of a tribal fight will be found in Hunter's Statistical Account of the Orissa Tributary States.

[3] Captain MacPherson succeeded Captain Campbell in 1842, and the 'agency for the suppression of human sacrifice and female infanticide' was established by Act XXI of 1845 with Captain MacPherson as the first Agent. To him belongs the credit of first introducing a mild system of government among the wild people.

II.—*Bengali and Behari Folk-lore about Birds, Part II.*—By Çarat Chandra Mitra. *Communicated by the Anthropological Secretary.*

[Received 26th October ; Read 7th December, 1898].

The Kite :—The Shankar Chil is known to naturalists as the *Haliastur indus* (Bodd.), but is commonly known to Europeans in India as the Brahminy Kite. This bird is popularly supposed to be the sacred Garuḍa, the mythical bird, half eagle and half man, which in Hindu mythology is the *vāhana* or "vehicle" of Vishnu, as is evidenced by the fact that, in Canarese and Telegu, the name Garuḍa is applied to this bird. The popular English appellation of Brahminy Kite is applied to this bird on account of its being associated, in the popular imagination, with the god Vishnu ; just as the sacred bull is called Brahminy Bull on account of its being associated with the god Siva whose vehicle it is.

There is also another legend connected with the Brahminy Kite. There was a semi-mythical Hindu king whose name was Kaṃsa, but who was a great tyrant. It was one day miraculously prophesied to Kaṃsa that the infant child, whom his sister Devakī was about to give birth to, would destroy him. Hearing this prophecy, King Kaṃsa ordered that the child, whether male or female, born of his sister Devakī should be killed as soon as it would be ushered into existence. On the night of the Janmāstamī Day, Devakī gave birth to the infant Krishna who was to be the future destroyer of Kaṃsa. The night was a stormy one. In order that the prophecy might be fulfilled, the infant Krishna was miraculously conveyed to the house of a neighbouring king, whose name was Nanda and whose queen had also the same night given birth to a daughter. The infant Krishna was substituted for Nanda's daughter who was taken to Devakī's house. As soon as the news that Devakī had given birth to a child, reached king Kaṃsa's ears, he, at once, sent messengers to slay the new-born child. In the meantime, King Nanda's daughter having been miraculously substituted for the infant Krishna, the messengers arrived in Devakī's house and proceeded to slay the new-born child. As soon as they were about to kill the child, King Nanda's daughter assumed the form of a *Shankar Chil* or Brahminy Kite and flew away, uttering the words that he, who was to kill King Kaṃsa, was thriving in the house of Nanda, King of Gokula. It is on account of the association of this bird with the god Vishnu and his incarnation Krishna, that it is held sacred in Bengal. Whenever Bengali children see a Brahminy Kite, they cry out :

শঙ্কর চিলের ঘটী বাটী ।
গোদা চিলের মুখে ছাতী ॥

TRANSLATION.

Let drinking vessels and cups be given to the *Shankar Chil* or Brahminy Kite; but let the Common Kite (*Milvus govinda*, Sykes) get a kick on its face.

I think the specific name *govinda* given by Sykes to the Common Kite has been so given in allusion to the association of this bird with the legend about the slaying of the infant Krishna, one of whose homonyms is Govinda.

In the South Indian folktale of *Light makes Prosperity*, a *garuḍa* or Brāhmaṇī Kite, mistaking the glittering rubies in the Rājā's ring for flesh, pounces upon it, carries it away and ultimately drops it in the house of the heroine Suguṇī.[1] Suguṇī returned it to the Rājā and obtained from him, by way of reward, the boon that on Friday nights, all the lights in the town should be extinguished, not a lamp being lit even in the palace, and that only her house should be lit up with lamps.

2. *The Parrot*:—In Hindu mythology, Kāmadeva or the Indian God of Love is represented as riding on the marine monster Makara, which may be identified with the shark, or on a parrot. In the Mahābhārata, there is a legend to the effect that the great Sage Vedavyāsa fell in love with an Apsara of the name of Ghritāchī, who, in order to save herself from the amorous advances of the Sage, assumed the form of a parrot.

In Bengali as well as in other Indian folktales, the parrot plays an important part. In the Bengali folktale, entitled *Strike but hear*,[2] it is a *Suka* or parrot which presents the king with a fruit of the Tree of Immortality, which, having accidentally been besmeared with the poison of a snake, killed a crow which ate of it. The king, thinking that the *Suka* had intended to kill him by making him eat the fruit, killed the bird in a fit of rage. Afterwards, the king discovered his mistake and found out that the fruit really conferred immortality on its eater. The same incident is also found in a South Indian folktale, wherein a parrot brings a wonderful mango fruit which confers perpetual youth on the eater thereof. The Rājā having made a present of it to his priest, the latter ate of it, which had been besmeared with the poison of a snake, and was killed. The parrot is killed. It is, subsequently, discovered that the mango really bestowed perpetual youth on the eater thereof.[3] The same incident also occurs in the Kashmiri Folktale of *A Lakh of Rupees for a Bit of Advice*. A parrot brings to his master, the Raja, the cuttings of two trees one of which possessed the virtue of making a young man old, and the other of making an old man young. The cuttings were planted and, in due time, flourished

[1] Kingscote and Sāstrī's *Folk-lore of Southern India*, p. 206.
[2] Day's *Folktales of Bengal*, p. 156–158.
[3] Kingscote and Sāstrī's *Folk-lore of Southern India*, pp. 171–177.

and bore fruit. The Raja gave one of the fruits, which had accidentally been besmeared with the poison of a snake, to a dog which ate it and died immediately. On seeing this, the Raja became very angry, and, thinking that the parrot had been playing tricks with him, ordered it to be killed, which was done. The Rājā subsequently discovered the mistake he had made and grieved much for the favorite parrot that he had so cruelly killed.[1] In the Panjabi folktale of *The Wonderful Ring*, the spendthrift Prince, who is the hero of the story, purchases a cat, a dog and a parrot for a pound each. The parrot brings to his master, the spendthrift Prince, news about his wife the Princess with the Golden Hair, who had been abducted by, and whose charmed ring had been stolen and swallowed up by, a wise woman at the instigation of a rival Rājā, and restores to his master the wonderful ring.[2] In one version of the legend of Rājā Rasālu, a parrot as also the horse Bhaunr Irāqi are the tried and trusted friends of Rājā Rasālu, with whom the latter goes forth into the world to seek his furtune.[3] It also plays the part of a match-maker in folktales, just as in the Bengali folktale entitled *The Story of a Hiraman*,[4] a parrot brings about the marriage of the king with the lady of peerless beauty who lives beyond the seven oceans and thirteen rivers. The same duties of a match-maker are also performed by a parrot in the Kashmīrī folktales of *The Clever Parrot* and *The Prince who was changed into a Ram*.[5] In these folktales, the parrot is credited with much wisdom and fidelity to its master; and its counsel and help are much sought after on difficult occasions. It often communicates to the deceived husband in folktales, much important information which would otherwise have remained unknown to him. In the Kashmīrī folktale of *The Clever Parrot*, it is a parrot which informs the Faqīr of any little thing out of the ordinary way which was done by the latter's wife.[6] It is often represented in folktales as being thoroughly conversant with the four Vedas, just as the falcon in the Squire's Tale of Chaucer is depicted as being a very intelligent bird.[7] In the Kashmīrī folktale of *Gullālā Sh̲āh*, Rājā Hams, who is the King of Birds, takes advice from the parrot on account of the latter's superior knowledge and wisdom.[8] In Santali folktales also, the parrot is represented as a very wise bird. In these stories, the Rājā's daughter having fallen in love with a man having hair 12 cubits long, the task of finding out the hero

1 Knowles's *Folktales of Kashmiri*, pp. 35–36.
2 Steel's *Tales of the Panjab*, pp. 185–94.
3 *Op. cit.*, pp. 239–40.
4 Day's *Folktales of Bengal*, p. 214.
5 Knowles's *Folktales of Kashmir*, pp. 317; 65.
6 Knowles's *Folktales of Kashmir*, p. 313.
7 Tawney's *Katha Sarit Sāgara*, II., 18.
8 Knowles's *Folktales of Kashmir*, p. 450.

with such long hirsute growths is often set to the parrot. The parrot gets hold of the hero's flute and flies away to the Rājā's palace; while the hero, in the hope of getting back the flute, pursues the parrot to the Rājā's palace, and is, at last, married to the princess.[1]

In the West Indian folktale of *Punchkin*, the life of the magician Punchkin depends on the life of a little green parrot, which is contained in a small cage below a pot full of water, above which are piled, one above another, five other pots full of water, these pots being in the centre of a circle of palmtrees standing in the midst of a jungle hundreds of thousands of miles away.[2]

3. *The Peacock*:—In Bengal, the peacock is considered sacred as being the vehicle of Kārtikeya, the Hindu God of War. In Sanscrit and Bengali poetry, the *keka* sound of the peacock is considered as one of the usual accompaniments of the rainy season, and its call is also believed to prognosticate rain.

There is a tradition current in the tributary state of Morbhanj in Orissa that the ruling family of that state derived its name "Morbhanj" from the fact of its having originally sprung from the egg of a pea-fowl. It is for this reason that the emblem of signature used by a chief of Morbhanj is a pea-fowl, and that the killing of peacocks is strictly forbidden throughout the state of Morbhanj.[3]

The peacock figures largely in Panjabi folktales. In the folktale of *Bopolūchī*, a peacock warns the pretty maiden Bopolūchī that the man who was taking her to his home was not her uncle, but a robber.[4] In a folktale from the same part of the country, a jackal and a pea-hen swear friendship. The pea-hen eats plums and buries the stones thereof, explaining that they will grow into trees; whereon the jackal buries the bones of a kid which he has eaten. The pea-hen's stones grow into plum-trees; but the bones of the kid planted by the jackal do not show any sign of germinating; whereon the pea-hen jeers at the jackal who, being angered thereby, gobbles her up.[5] In the popular folklore of Northern India, various kinds of birds are supposed to guard the palaces of Rajas. In one version of the legend of Rājā Rasālu, five peacocks, eight ospreys and nine water-fowls keep watch and ward over Queen Koklan's palace. Some suppose that these birds are, in reality, men of different tribes.[6]

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1 Campbell's *Santal Folktales*, pp. 16; 114.

2 Jacob's *Indian Fairy Tales*, p. 34.

3 *The Native States of India and their Princes.* Madras: The Christian Literature Society. 1894. p. 45.

4 Steel's *Tales from the Panjab*, p. 66.

5 *Op. cit.*, pp. 195-6.

6 Swynnerton's Rājā Rasālu. Edition 1884, pp. 219-220.

4. *The Goose* :—In Hindu mythology, the Goose or *Haṃsa* is the *vāhana* or vehicle of the god Brahmā, the creator of the universe. This bird figures often in Indian folktales. In the Kashmīrī folktale of *Gullālā Shāh*, Rājā Haṃsa or King Goose is mentioned as being the King of the Birds.[1]

5. *The Bihangama and Bihangamī* :—In Bengali folktales, a mythical bird called *Bihangama* and its female *Bihangamī* play an important part. These birds are endowed with the power of speaking like human beings and of foretelling future events. In these stories, these two birds often aid the hero and, being able to see into the future, prevent him from falling into dangers. It is the dung of the prophetical bird *Bihangama* which, being applied to the body of Prince Sabur in the Bengali folktale of that name, cures the latter of a fatal illness.[2] In Kashmīrī folktales, two mythical birds called Sudabror and Budabror figure largely. These birds are also credited with the powers of human speech and of seeing into the future and foretelling future events.[3]

6. *The Chakor* :—This bird, which is known in Bengali as *Chakor*, is known to naturalists as the *Caccabis chucar*, Gray. This bird is frequently mentioned in Sanscrit and Bengali poetry. It is popularly supposed to live by partaking of the moon's rays. There are numerous passages in Sanscrit and Bengali poetry wherein this curious tradition is referred to. Its eyes are also very beautiful, and the poets often liken the eyes of a beautiful damsel to the eyes of the Chakor, by calling her चकोराक्षि.

7. *The Chakā and Chakī* :—This bird *Chakā Chakī* (Sanscrit *Chakravāk*) is famous in the classical literature of India. Its scientific appellation is *Casarca rutila*, Pallas; but it is commonly known to Europeans in India as the Ruddy Sheldrake or Brahminy Duck. In Bengal, it is regarded as a pattern of conjugal fidelity, as is evidenced by numerous allusions to it in Bengali literature.

In the Panjabi folktale of *Princess Pepperina*, the soul of Princess Pepperina, when she dies, was metamorphosed into a sheldrake and its mate —those loving birds which, like the turtle-dove, are always constant; and, floating in a lake, they mourned the sad fate of the Princess. When the Princess' husband, the Rājā, caught the pair of the sheldrake, and, holding them close, heart to heart, severed their heads from their bodies with one blow of his sword, so that neither of them could die before the other, the Princess Pepperina became alive again.[4] There is a tradition current in Bengal to the effect that a pair of this bird spends the day in each other's com-

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1 Knowles's *Folktales of Kashmir*, p. 449-50.

2 Day's *Folktales of Bengal*, p. 135.

3 Knowles's *Folktales of Kashmir*, pp. 168; 198; 231.

4 Steel's *Tales from the Panjab*, pp. 165-66.

pany, but as soon as nightfall sets in, the birds separate, and each of them spends the night alone sorrowing for separation from its mate. This tradition is based on a very pretty legend, which runs to the effect that two indiscreet lovers were metamorphosed into a pair of Brāhmani ducks, and condemned to pass the night in a state of separation from each other, on the opposite sides of a river. One of the birds asks its mate, all through the night, whether it should join the other; but the other always replies in the negative. In Burma, this bird is regarded as an emblematic bird, and special honour is shewn to it. It is also said to be held sacred in Mongolia.

8. *The Hornbill* :—The Hornbill is called *Dhanes* in Bengali, and is known to naturalists as *Ocyceros birostris*, Shaw. Its bone is popularly supposed in Bengal to cure rheumatism. I have, on several occasions, seen bits of the bones of this bird being sold by itinerant vendors in the streets of Calcutta.

9. *The White-necked Stork* :—The White-necked Stork (*Dissura episcopus*, Bodd.) is called in Bengali *Manikjor*, which means the companion of a saint. Hence Mahomedans, one of whose saints is the Manik Pir, do not eat this bird.

10. *The Adjutant* :—It is called in Bengali *Hāḍgilā* or the *devourer of bones*, on account of its being a carrion-feeder. In Bengal, all Hindus consider this bird an unclean one.

11. *The King-Crow* :—The King-Crow (*Dicrurus ater*, Hermann.) is known in Bengali as the *Finga*. It figures largely in the nursery-stories and nursery-rhymes of Bengal, as will be evident from the following specimen of a Bengali nursery-story in which it plays an important part :—

Once upon a time, there lived an old man and his aged wife who had an only child, namely, a married daughter and, among worldly possessions, a country-plum tree (*Zizyphus jujuba*).[1] One day, their daughter, who lived with her husband, sent some *Puṇti* fish (*Barbus puntio*, Day), as

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[1] This is the tree known as *kul* in Bengali, and *ber* in Hindi. It is planted for the sake of its sub-acid fruits which are eaten either raw or cooked, or pickled in various ways. It constantly occurs in folktales. It is mentioned no less than five times in a collection of folktales from the Panjab. In the *Rat's Wedding*, the rat sets his bride to cry wild plums in the streets to sell for her food. *Peasie*, in the tale of *Peasie Beansie*, goes to see her father and, on the way, tidies up the plum-tree's thorns, for which act of benefit the tree rewards her with an abundance of ripe yellow plums. In the story of the *Jackal and the Pea-hen*, the pea-hen eats plums and buries the stones, saying that they will grow into trees, whereon the jackal eats a kid and buries its bones. The pea-hen's plum-stones grow up into fine trees, whereas the jackal's bones do not. Thereupon the pea-hen jeers at the jackal; and the jackal, being angered thereby, eats her up. The plum-tree is also mentioned in the tale of *the Jackal and the Crocodile*. There is a plum-tree in the story of *Prince Half-a-son* into which the hero, Prince Half-a-son, can only ascend. (*Vide* Steel's *Tales from the Panjab*, p. 20; pp. 167, 169-70; 195-6; 230-1; p. 280.)

present to her old parents. Now the old woman being away from the house, her old spouse had the fish cooked and ate the same all himself. In order to conceal the fact of his having eaten all the fish himself, the man went to conceal the fish-bones and scales in the backyard of the kitchen; but the backyard, for inanimate things could speak in those olden times, refused to allow him to conceal them there, saying that it would tell the old woman, on her return home, that her husband had eaten up all the fish without keeping any for her. The old man next went to a pair of millstones (used for pounding pulses and other grains) for concealing the bones and scales thereunder; but the millstones also refused to conceal them, saying that they would inform the old woman, on her return home, all what had happened in her absence. So the old man went to other places and objects; but all of them refused to allow him to conceal the remains of the fish under them. Ultimately, the old man was obliged to conceal the bones and the scales of the fish in the long hair of his head; and had the same tied up into a chignon to conceal them the more effectively. In the meantime, the old woman returned home, but not knowing anything about the present of fish sent by her daughter, did not suspect that her husband had eaten all the fish himself. One day, the old woman, addressing her husband, said: "Hallo, my darling, your hair has become fluffy and dust-begrimed; come here, and I shall rub some oil into it to make it smooth and clean." The old man refused, fearing that, in untying his chignon, the fish-bones and scales would be discovered, and his old lady would come to know of his having eaten up all the fish himself. But the old woman would not take any refusal; and, at last, the old man was obliged to have his hair oiled and dressed by his wife. The old woman, on untying his chignon, found out the fish-bones and scales and, enquiring from her old spouse, came to know all what had happened in her absence. Vowing to avenge herself on her husband for his selfishness, she, one day, told her husband to get on to the thatch of their hut, and pluck a gourd. As soon as the old man had got on to the top of the hut, his old lady removed the ladder; but, as soon as the ladder was removed, the old man, being without any prop, rolled down the sloping thatch, fell on the ground with a heavy thud and died then and there. The old woman, regretting her indiscreet act, wept much at the death of her old spouse. Being alone, she made up her mind to go and live with her daughter; but she was very anxious about finding a person in whose charge she should leave her plum-tree which was, at that time, laden with ripe fruits. This made her weep the more bitterly. A crow, who was passing that way, seeing the old woman weeping and wishing to enquire into the cause of her grief, went to her and asked her: "Hallo! my good woman, why are you weeping?" The old woman replied: "What will it avail me by telling you the cause of my grief?" The crow said: "Pray tell me so as to let me know whether I can be of any service to you." The old woman, thereupon,

replied: "I am weeping, because there is nobody to look after my plum-tree which is now groaning beneath the weight of ripe fruits." The crow replied: "Don't be anxious, my good woman, I shall keep watch and ward over your tree." The old woman rejoined: "Will you please tell me in what way you will look after my tree?" The crow replied: "I shall bawl out the following words and keep off all intruders from your tree:

Kā kā kā
Buḍīr māthā khā khā."
Caw! Caw!! Caw!!![1]
Eat the head of the old woman, i.e., *may she die.*

Thereupon, the old woman got angry with the crow on account of the latter's impertinence in having wished her death, and dismissed him at once. She then began to weep as before.

Thereafter, a kite, who was passing by that way, saw the old woman weeping and, wishing to enquire into the cause of her grief, went up to her and said: "Hallo! my old lady, why are you weeping?" The old woman replied: "What will it avail me by telling you the cause of my grief?" The kite rejoined: "Do be good enough to tell me the cause of your grief so that I may know whether I can be of any service to you." Thereupon the old woman said: "I am weeping because there is nobody to look after my plum-tree which is now groaning beneath the weight of ripe fruits." The kite replied: "Pray don't bother your head about such a trifling matter. I shall look after the plum-tree during your absence." The old woman rejoined: "Will you please tell me the exact words with which you intend to keep away all intruders from off my tree?" The kite replied: "Why, I shall bawl out the following words, and drive away all intruders:

Chil Chil Chil
Buḍīr māthāya ḍhil ḍhil"
Chil! Chil!! Chil!!![2]
May brickbats fall on the head of the old woman.

Thereupon the old woman got angry with the kite on account of his insulting behaviour in having wished that brickbats might fall on her head, and sent him away at once. She again commenced weeping as before.

Thereafter, a king-crow (*Fingā* in Bengali), who was passing by that way, saw the old woman weeping and, being anxious to enquire about the reason of her weeping, went up to her and said: "Hallo, my good woman, why are you weeping?" The old woman replied: "What will it avail me by telling you the cause of my grief?" The king-crow said: "Pray tell me the reason of your weeping just to let me know whether I can be of

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1 The words "*Caw, Caw, Caw*" signify the cry of the crow.

2 The words "*Chil, Chil, Chil*" are onomatopoetic, and denote the call-note of the kite.

any service to you." Thereupon, the old woman replied: "I am weeping because there is nobody to look after my plum-tree which is now groaning beneath the weight of ripe fruits." The king-crow replied: "Pray don't be anxious about such a trifling matter. I am at your service and shall keep watch and ward over your tree during your absence." The old woman rejoined: "Will you please tell me the exact words with which you propose to keep away all intruders from off the tree?" The king-crow replied: "Why, I shall bawl out the following words, and drive away all interlopers from off the tree:

Fing fingeti bābui hāti
Je buḍīr kul khāya
Tār nākchul kāti"
Fing fingeti bābui hāti.[1]
I shall cut off the nose and hair
Of whomsoever will eat the old woman's plums.

Thereupon, the old woman was highly pleased with the king-crow's devotion to her service and, placing the latter in charge of the tree, left her own home and went to live with her daughter. The king-crow also began to keep watch and ward over the plum-tree.

One day, a Rājā, happening to pass by the old woman's place, was tempted by the ripe plums on the old woman's tree. He sent a servant to pluck some of the fruits for himself. As soon as the servant arrived near the tree, the king-crow bawled out:

"*Fing fingeti bābui hāti*
Je buḍīr kul khāya
Tār nākchul kāti."
Fing fingeti bābui hāti.
I shall cut off the nose and hair
Of whomsoever will eat the old woman's plums.

Being thus deterred from plucking the fruits, the servant went back to the Rājā and reported what the king-crow had said and done. Waxing wroth with the king-crow's insolent behaviour, the Rājā ordered a fowler to go to the old woman's place and catch the impertinent bird. Accordingly, the fowler went to the old woman's place and, entrapping the king-crow, took him to the palace and placed him before the Rājā. The Rājā ordered his Rānī or queen to kill the insolent bird and cook him for his dinner. So the bird was placed alive in a receptacle with a lid, with a view that, before dinner-time, it would be killed and cooked for dinner. In the meantime,

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[1] I am unable to explain the meaning of the words "*Fing fingeti bābui hāti.*" The word *fingeti* in this expression means "the king-crow," and the word *bābui* therein signifies the Indian weaver-bird, which constructs hanging bottle-shaped nests on trees. The other words of the expression are, perhaps, meaningless.

while the Rānī was alone and looking after the bird, it began to say :

"*Rānī, dhākan kholo*
Nāchan dyākho."
O queen ! take off the lid of the receptacle,
And see me dance.

Being struck with curiosity at the bird's importunate request, the Rānī took off the lid of the receptacle to see whether the bird was really dancing or not. As soon as the lid was taken off, away flew the king-crow; and the Rānī was very much frightened at the bird's escape, as she would be unable to serve it up for the Rājā's dinner. At last, being afraid lest the Rājā would get angry with her for having allowed the bird to escape, she hit upon the device of cooking a frog, and serving it up, in lieu of the bird, for the Rājā's dinner, thinking that the Rājā would not be able to distinguish between the flesh of a bird and a frog. She, accordingly, cooked a frog and served it up before the Rājā for his dinner. While the Rājā was partaking of it, the king-crow, which was perched on the branch of a tree right in front of the Rājā's dining-room, began to cry out :

"*Ami beḍāi ḍāle ḍāle*
Rājā khāy byāṇger jhol."
I am perched on the branch of a tree ;
While the Rājā is partaking of frog-curry.

Finding that the insolent king-crow had escaped, and that a frog had been cooked and served up for his dinner in lieu of the bird, the Rājā grew very angry and, at once, despatched a fowler to capture the bird again. The fowler, accordingly, went and brought back the bird in a cage. The wing-feathers of the bird were then cut off to prevent it from escaping. This time the king-crow was placed in that room of the palace, which was set apart for the family-idol, in order that it may not escape again. The crafty bird managed to ensconce itself beneath the bedding of the family-idol and began to cry out : "*Chul, Chul,*" that is to say, "I want offerings of hair." Thereupon, the foolish Rājā thought that the family-idol was demanding from him offerings of hair, not being able to make out that it was the bird which was crying out for the same. In order to comply with the family god's wishes, the Rājā, the Rānī, and the prince had the hair of their heads shaved off at once, and placed the same as offering before the idol. Being thus avenged on the Rājā for the loss of its wing-feathers, the king-crow began to bawl out :

"*Ek nyāḍā ke dekhe sab tomrā baḍa hāṁsa.*
Ekhan ek gharete tin nyāḍā keman bhāla bāsa."
You all laughed outright when you saw me being deprived of my wing-feathers.
Now that you all three in one family (namely, the Rājā, the Rānī,

and the prince) have got clean-shaven pates, how would you like to laugh at yourselves?

Being enraged at the king-crow's insulting words, the Rājā ordered the insolent bird to be killed, which was accordingly done. Thus the story endeth.

12. *The Hawk*:—The hawk figures in Bengali folktales. In the Bengali folktale of *The Man who wished to be perfect*,[1] when the princes went with the mendicant to the forest, they took with them young hawks, which they had to give to the *Rākshasī* when they lost the game they played with the latter. In Kashmiri folktales, whenever a Rājā dies, an elephant and a hawk are sent round the whole countryside to select a successor to the vacant throne. In the course of their peregrinations to find out a successor, whenever the elephant and the hawk come across the person who is to be selected for the high office, the elephant bows down before him, and the hawk perchs on his right hand, and thus proclaims him Rājā in the presence of all the people.[2] The people also believed that before whomsoever the elephant bowed down and on whosoever's hand the hawk perched, he was the divinely-chosen Rājā destined to succeed to the vacant throne.

The hawk also plays an important part in Panjabi folktales. When the vampire, in the Panjabi folktale of *Sir Buzz*, changed into a dove, Sir Buzz assumed the form of a hawk and pursued the dove-shaped vampire so closely that the latter changed his form into a rose and dropped into King Indra's lap, as he sat in his celestial court listening to the singing of dancing girls.[3] When the Jinn, in the folktale of *Princess Pepperina*[4] from the same part of the country, is desirous of seeing his foster-child, the Princess Pepperina, he assumed the form of a hawk and sped after her, circling far above her head, and found her happy in the company of her husband.

13.—*The Dove*:—The dove also figures in Indian folktales, its form being often assumed by giants and ogres to escape detection. In the Panjabi folktale of *Sir Buzz*, the vampire changed to a dove to escape capture by the mannikin Sir Buzz. But Sir Buzz, assuming the form of a hawk, pressed the dove-shaped vampire so hard that the latter ultimately changed into a rose.[5] A Jinn, in another folktale from the same part of the country, assumes the form of a dove, when desirous of seeing his absent foster-child, Princess Pepperina, flies after her and flutters above her head.[6]

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[1] Day's *Folktales of Bengal*, pp. 189; 191.
[2] Knowles's *Folktales of Kashmir*, pp. 17, 159.
[3] Steel's *Tales from the Panjab*, p. 11.
[4] *Op. cit.*, p. 631.
[5] Steel's *Folktales from the Panjab*, p. 11.
[6] *Op. cit.*, p. 163.

14. *The Pigeon* :—Fairies often assume the shape of pigeons in Indian folktales. In the Panjabi folktale of *The Faithful Prince*, the Fairy Princess Shâhpasand often assumes the shape of a pigeon, while taking the air. While living with Prince Bahrâmgor in the huntsman's garret, she was one day seen by the Chief Constable of the town, who, struck with her exquisite beauty, sends some soldiers to the huntsman's lodge to make enquiries after her. Fearing detection, Princess Shâhpasand took the form of a pigeon and flew away to her father's house in the Emerald Mountain. Much curative virtue is ascribed to pigeon's droppings in Indian fairy-tales. In a fairy tale from the Panjab, the king's daughter is possessed by a demon and is, in consequence thereof, taken severely ill. Her illness baffles the attempts of every physician all round the country, to cure her. Ultimately, the hero of the story, Prince Half-a-son, administers a dose of the pigeon's droppings to the ailing princess and cures her who is, thereafter, married to him.[1] In the Kashmiri folktale of *The Ogress-queen*, the life of ogress-queen's father is contained in a pigeon. The hero of the story, who is the son of seven mothers, kills the old *Rākshasa* by slaying the pigeon.[2]

15. *The Bulbul* :—Heroines of folktales are often hatched out of bird's eggs. A bulbul, in the Panjabi folktale of the *Princess Peppeeina*, desires to eat a green pepper and tells her mate to procure it for her. Her mate goes to search for it and, ultimately, finds it in a Jinn's deserted palace, where they eat it. Thereafter, the female bulbul lays an egg beside the green pepper which the Jinn finds and puts it away, wrapped up in cotton-wool. Out of this egg is born the loveliest maiden, afterwards known as Princess Pepperina.[3] In the Bengali folktale of *Swet-Basanta*, the heroine of the story is born of the egg of a small bird called *Toontooni*, which is found by the merchant's son, while walking in his garden, and put by him in a niche in the wall of his house. The egg, one day, burst; and out of it came forth a beautiful girl whom the merchant, ultimately, married.[4]

16. *The Cuckoo* :—The Cuckoo is a well-known bird in Indian folk-lore. It figures largely in Sanskrit and Bengali poetry, as the harbinger of spring. Its notes are supposed by the poets to awaken feelings of love in the hearts of lovers separated from their sweethearts, and make them yearn for the company of their absent mates. It is, sometimes, found to figure in folktales. In the Panjabi folktale of *The Death and Burial of Poor Hen-Sparrow*, a Cuckoo mourns the death of the hen-sparrow by plucking out one of his own eyes.[5]

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1 *Op. cit.*, pp. 281–83.
2 Knowles's *Folktales of Kashmir*, p. 49.
3 *Op. cit.*, pp. 160-1.
4 Day's *Folktales of Bengal*, pp. 93–6.
5 Steel's *Tales from the Panjab*, p. 152.

17. *The Eagle* :—Ogres, in folktales, are supposed to assume the form of an eagle. The Jinn, in the folktale of the *Princess Pepperina*, takes the form of an Eagle, and flying after his foster-child, Princess Pepperina, finds her entering the King's palace.[1] The Eagle is cheated by the Lambikin in another tale from the same part of the country.[2]

18. *The Crow* :—The crow warns heroines in folktales of impending danger. In the folktale of *Bopoluchi*, it warns the heroine Bopoluchi that her alleged uncle was no other than a robber.[3] In another tale, a crow is overreached by a sparrow.[4] In another tale, a crow swoops off with a grain of corn while a farmer's wife is winnowing the same. In order to drive off the crow, she throws a stone at him and knocks him down, but agrees to let him off should he recover the grain. The grain of corn having fallen into a crevice in the trunk of a tree, the crow goes to a woodman and tries to persuade him to cut the tree down, but he refuses. Thereafter, he successively goes to the king, queen, snake, stick, fire, water, ox, rope, mouse, and lastly, a cat. The cat went at once after the mouse; so all the individuals from whom the crow had asked for assistance, began to do their duties, till the crow got back the lost grain of corn and, thereby, saved his own life.[5]

19. *The Partridge* :—The Partridge is the friend of the jackal in a folktale from the Panjab. The jackal gets the partridge to perform various tasks, as test of her friendship for him. The partridge performs all the tasks successfully, ultimately saving the jackal's life by preventing a crocodile to drown him.[6]

20. *The Quail* :—The Quail figures in the Santali folktale of *Sindura Gand Garur*, wherein the hero, being informed that his father had been killed by the bird Gand Garur, goes to the forest and, meeting the quail among other birds there, sings to it :

"Oh! quail, you need not fear to drink,
I'll not harm you, I you assure;
But I will slay on this lake's brink,
Cruel Sindura Gand Garur.[7]

21. *The Vulture* :—In the folktale of the *Lambikin*, Lambikin meets a Vulture who wants to eat him up, but escapes by saying that he is not yet fat enough for eating and that he is going to his granny to be fattened, when he will be welcome to eat him up. On his return after being fattened in his granny's place, he trundles along in a drumikin made of his brother's skin, and escapes detection by the vulture.[8]

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1 *Op. cit.*, p. 163.
2 *Op. cit.*, p. 63.
3 *Op. cit.*, p. 66.
4 *Op. cit.*, pp. 102–6.
5 *Op. cit.*, pp. 198–202.
6 Steel's *Tales from the Panjab*, pp. 173–77.
7 Campbell's *Santal Folktales*, p. 91.
8 Steel's *Tales from the Panjab*, p. 62.

22. *The Nilkaṇṭha* :—I have already given, in the previous part of this paper, a full note on the folklore about this bird. I want to record an additional item of folklore about it, in the present paper. Just as I am writing this paper, the wife of a fowler in the service of the Hathwa Raj has brought me a fine specimen of the Nilkaṇṭha or Blue Jay, tied to a string and concealed in the folds of her *sari*, so that I may have a look at it, and lay up a store of merit thereby, as to-day (the 24th October, 1898) is the Dusserah day. The fowler's wife (*mishkārin*) tells me to stand with my face turned towards the north, saying that the late Maharaja of Hathwa used to do the same thing, and to have a look at the Blue Jay in this position. I have, accordingly, stood with my face turned towards the north, and caught a glimpse of this sacred and auspicious bird and have, thereby, laid up a store of merit which, I hope, will last me throughout the year. The fowler's wife is taking the bird from house to house so that the inmates thereof may have a look on this auspicious bird on this auspicious Dusserah day.

23. *The Mainā* :—The *Mainā* is known to naturalists as *Eulabes intermedia*, Hay. It figures largely in Indian folktales. It explains to the hero, in Indian folktales, the heroine's misfortunes.[1] Sometimes, the life of an ogre is contained in a *mainā* in its nest which is on a tree across the seas. When the *mainā* is killed in such a way that not a drop of its blood is spilt, the ogre, whose life-index the bird is, dies.[2] Sometimes, the lives of jinns and ogres are contained in starlings which appear to be the same birds as mainas. In the Panjabi folktale of *Prince Lionheart and his three friends*, the soul of the Jinn is contained in a bumble bee which is inside the crop of a starling which sits singing in a golden cage on the topmost branch of a solitary tree far far away, which is guarded by a dog and a horse. Prince Lionheart finds out the solitary tree, appeases the horse and the dog by giving them some food, and, seizing the starling, cuts open its crop, seizes and kills the bumble bee whereupon the Jinn dies.[3] In the Kashmiri folktale of *The Ogress-queen*, the soul of the ogress-queen is contained in a starling. The hero of the story, who is the son of seven mothers, secures the starling in a cage, takes it home to the Raja and, in order to prove that the latter's favourite wife is an ogress whose life is in the starling, slays the starling whereupon the wicked ogress-queen also dies.[4]

In Indian folktales, the incident of a person becoming a king by eating a particular kind of bird, and of another person becoming a prime minister by eating another kind of bird, often occurs. In the Panjabi tale of *The two Brothers*, a dispute takes place between a starling and a parrot as to

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1 Stokes's *Indian Fairy Tales*, p. 149 ff.

2 *Indian Antiquary*, Vol. I., p. 171.

3 Steel's *Tales of the Panjab*, pp. 52-3.

4 Knowles's *Folktales of Kashmir*, pp. 49-50.

which of them is the most important. The starling says that he is so important a bird that if any man will eat him, he will without doubt, become a prime minister. The parrot says that if any man will eat him, he will, without doubt, become a king. This conversation having been overheard by the two brothers, the heroes of the story, the elder of them killed and ate the parrot and become a king. The younger brother ate the starling and, marrying the daughter of the prime minister of a king, himself became the prime minister.[1] The same incident also occurs in the Kashmiri variant of *The two Brothers*. In this variant, the mystic bird Sudabror expounds to its mate Budabror the virtues of two singing birds and says that whosoever will eat the flesh of one of the latter will become a king, and whosoever will eat the flesh of the other will become a wazir and the wealthiest man in the world, for every morning he will find underneath him, in the place where he lay overnight, seven jewels whereof the value cannot be estimated. Hearing this conversation between the Sudabror and the Budabror, the younger prince kills the birds and cooks the same which are partaken of by the two brothers. The elder brother becomes the Raja, and the younger the Wazir.[2] Sometimes, the starling or mainā performs the duties of a matchmaker in Indian folktales. In the Kashmiri folktale of *The Prince who was changed into a Ram*, the mainā is deputed by the Raja of a country, who had sixteen hundred wives, to try to arrange for a suitable match for the only daughter of his royal master, by finding out a beautiful prince who is the only child of a great king also possessed of sixteen hundred wives.[3]

24. *The Cock*:—The lives of ogres are often contained in Cocks. In the Kashmiri folktale of *The Ogress-queen*, the lives of the ogress-queen's seven brothers are contained in seven cocks. The hero of the story, who is the son of seven mothers, kills the seven ogress by killing the seven cocks.[4]

25. *The Pond-Heron* and the *Cattle Egret*:—Both the Pond-Heron (*Ardeola grayi*, Sykes) and the *Cattle Egret* (*Bubulcus coromandus*, Bodd.) are called in Bengali *Bak*. It is popularly believed among Bengali women and children that the white spots, sometimes, found on the finger-nails of the hands are caused by the *Bak*. Hence, whenever Bengali children find a *Bak* flying past, they cry out: "*Bagā māmā, Bagā māmā, ti diye jāo.*"

TRANSLATION.

"Uncle heron, uncle heron, come and cause white spots to be made on our fingers."

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[1] Steel's *Tales of the Panjab*, pp. 130-42.
[2] Knowles's *Folktales of Kashmir*, pp. 168-73.
[3] *Op. cit.*, pp. 65-66.
[4] Knowles's *Folktales of Kashmir*, p. 49.

In Hindi, both the aforesaid species of herons are called *Baglā* or *Bakulā*. Behari children often take a stick with a crooked end and, holding the crooked end upwards so as to make it resemble the long beak of a heron, moves it backwards and forwards and cry out: *Bakuli, toiṇ, toiṇ, toiṇ.*"

26. *The Swan*:—Swans are popularly believed in India to feed upon fresh unpierced pearls, and will not eat anything else. In vernacular, this bird is, sometimes, called *Hans* which is supposed to be a large white fabulous bird which lives on the shores of lakes and seas. Its beak is thick, and so hooked that it is able to pick up only pearls, one at a time. Some identify the *Hans* with the Flamingo. While on a visit to the Calcutta Zoo sometime ago, I heard some Marwari visitors calling the Crowned Cranes, living in the paddocks just to the west of the Gubboy House, *Hans*. In the Panjabi folktale of *The king who was fried*, King Bikramâjit feeds the Swans which came from the Mānsarobar Lake to the city of Ujjayin, with baskets of pearls every day.[1]

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[1] Steel's *Tales from the Panjab*, p. 267. Swynnerton's *Râjâ Rasâlu*. Calcutta: Newman & Co., 1884, p. 217.

III.—*The Story of Hazuri.*—*By* Dayaram Gidumal, *Judge, Shikarpur, Sindh. Communicated by the Anthropological Secretary.*

[Received 15th November, 1898; Read January 4th, 1899.]

Introduction.

Sometime ago a Mahommedan prisoner Hazuri was tried by me on a charge of attempting to murder a Darwish. The facts set forth by the Committing Magistrate were so curious that I considered it my duty to examine the accused at great length, in order to ascertain if he was sane or insane. He spoke in Hindustani; and the questions and answers are all on record in that language. The following narrative is compiled from my *verbatim* translation of that statement. The narrative deserves attention for several reasons. In the first place, it shows that Lall Shahbaz, a deified saint of Sindh, has his esoteric disciples up to date, who though Mahomedans, believe in transmigration, and revere Ali as Allah himself. In the second place, it shows that the followers of this cult have a freemasonry of their own, and are distinguished by absolute and implicit obedience to their teachers—obedience far more absolute and implicit than that which the Jesuitical order ever exacted from their acolytes. In the third place, it shows that these men not only believe in the resurrection of the dead, but claim to revive the dead by their own spiritual power. Lastly, the case is very interesting from the medico-juridical point of view.

So far as I know neither Professor Lombroso in his book, "The Man of Genius," nor Mr. Nisbet in his work on "The Insanity of Genius," has quoted any case like the present. Chevers in his "Medical Jurisprudence in India" quotes the French poet M. Baudelaire's experiences as a *haschish-eater*, and the '*theatre of seraphim*' which Hazuri also mentions, is one of them. Moreu of Tours, who experimented on himself, tells us: "The *haschish-eater* is happy, not like the gourmand, the famished man, or the voluptuary, who has satisfied his appetite, but like him who hears tidings of great joy, the miser counting his money, the gambler successful in play, or the ambitious man whose hopes are realized." But no *haschish-eater* ever claimed the power of reviving the dead, so far as I am aware, and Hazuri's case is, therefore unique.

It ceases, however, to be unique if we look upon Hazuri not merely as a *haschish-eater*, but as a disciple of the Mahomedan School proudly called *Jalali*, as distinguished from the *Kâdri*. The *Jalalis* say that Mahommed —the Prophet of God—imparted his esoteric doctrines to his son-in-law Ali only—and that Ali imparted them to Hussen only (and not Hassan).

Hussen's spiritual disciples are as follows :—

Imam Hussen (called *Jalālulain*)
|
Imam Zainulābidīn
|
Imam Muhammad Bākar
|
Imam Muhammed Jāffar Sādik
|
Imam Kāzim
|
Imam Ali Musa Razā
|
Sayad Muhammad Takī
|
Sayad Baba Jamal Mujrid (of Kolhapur)
|
Sayad Usman Ali Marwandi Husseni (*alias* Lall Shahbaz).

I have taken this genealogy from a rare manuscript, a copy of which was kindly given to me by a disciple of Lall Shahbaz, who believes himself *en rapport* with him.

Sayad Usman Ali is called Marwandi as he was born at Marwand in the district of Tabriz. He is called Husseni, as he was a Sayad and a descendant of Hussen. He is called Kalandar Badshah, as he is considered the greatest of those who renounced the world and devoted themselves to the Higher Path. He is called Lall (or Ruby-red), as he is said to have been called upon by his spiritual father at Kolhapur to plunge into a gigantic cauldron of red-hot oil, from which he issued forth roseate and with the bloom of heaven. He is called Shahbaz or a royal falcon, because it is said he assumed that form in order to save his friend Bahawal Hak from the gallows. In the manuscript life already referred to, it is also stated that Muhammad, during his celestial journey, saw him flying in the 7th heaven, and was told by Gabriel that he would be incarnated on earth as one of his (the Prophet's) descendants. I have with me three manuscripts full of his miracles, and the fact that so many traditions have gathered round his name, would go to show that he must have been an extraordinary man.

He is also still revered. In the official Sindh *Gazetteer*, for example, we find the following account of his shrine which is situated in the town of Sehwan in the Karachi District :—

"There is another object of attraction in this town, though by no means of such ancient date as the old fort. This is the tomb or shrine of a much revered saint, known among the Mussulman population as Lall Shahbāz, but by the Hindus as Raja Bhartri. The tomb which contains the remains of this saint is inclosed in a quadrangular edifice covered with

a dome and a lantern, said to have been built by a former governor, Malik Ikhtiar-uddin about A. D. 1356, and having beautiful encaustic tiles bearing numerous inscriptions in the Arabic character. Mirza Jani of the Turkhan dynasty built a still larger tomb to this saint, to which additions were made by his son Mirza Ghāzi. The whole was not, however, completed till A. D. 1639 by Nawab Dindar Khan, who paved the courtyard with glazed tiles, and otherwise added to the place. The gate as also the balustrade round the tomb are said to have been of hammered silver, the gift, it is believed, of Mir Karam Ali Khan Talpur who placed, besides, silver spires on the top of the domes..... Great numbers of pilgrims, both Mussulmans and Hindus flock to this spot, not only from all parts of Sindh but from neighbouring countries as well, and it is believed that a considerable revenue is obtained from them."

This short account shows the esteem in which the saint was held by the Mussulman rulers of Sindh, and by the people generally. The *Jalali* Fakirs in Sindh do not deny that Lall Shahbāz was Bhartri Hari, and some of them go even so far as to say that Ali is merely an incarnation of *Rama*. They have an all-embracing catholicity and count the great Sufis—Mansur and Shams Tabriz—among their elect. They have, however, no great respect for the *Kadris*—followers of Abdulkādr Gilani, a descendant of Hassan who, according to them, represents the exoteric School or the School of *Law* as distinguished from the School of *Love*.

Lall Shahbaz is said to have been a friend and contemporary of Bahawal Hak whose mausoleum at Multan is as imposing as the Kalandar's at Sehwan. Bahaud-din Zikriya (for that was his full name) was a Kureshi, and in Griffin's "Panjab Chiefs" (pages 490-94) there will be found a pretty full life of this saint. Bahawal Hak was born on the 28th of Ramzan A. H. 566 (A. D. 1149), and he is said to have been a centenarian. We may take it also that Lall Shahbaz flourished in the 12th century, for the words *bākhuda* (with God) in the quatrain recording his death, yield, according to the *Abjad* calculation, the year 608 A. H. as the year of his union with God.

I notice that one of the miracles commonly ascribed to him—the miracle of raising a foundering ship from the sea—is, by Lall Shahbaz's disciples, said to have been performed by their patron saint when he was on his travels with Bahawal Hak and two other adepts. This throws some light on the transference of miraculous stories, just as another miracle ascribed to Lall Shahbāz at Sehwan and connected with Bodlo Bahār reminds one of the story of Shukr Acharya and *Kacha* told in the "Adi Parva" of the Mahabhārata.

Many of the miracles can be thus explained away, but the great fame of the saint and the fact that he is worshipped by both Hindus and Mussul-

mans are an eloquent testimony to his greatness. A fair is held at his shrine which attracts thousands, and a ceremony is performed which show the belief of the masses that he was an ardent lover of God. The ceremony is called in Sindhi *Mendi lâiṇ* (or application of henna). Only three families at Sehwan have the privilege of 'applying henna'—that is of putting it near the flagstaff, and of sprinkling attar, ambergris and other scents on the turban at the head of the tomb. Of these three families two are Hindus. The Sayads have the privilege of 'applying henna' on the first day of the fair, that is, the 18th of Shaiban, the Hindu Mirani family on the second day, and the Hindu Kanuga family on the third. The ceremony symbolises the marriage (*wasl*) of the saint's soul to God, as Mahommedan brides and bridegrooms usually dye their hands and feet with henna on the marriage day.

Every one of the said families takes a new covering for the tomb with the henna. But the coverings presented by the Sayads and the Miranis go to the Toshakhana (or Stores), while the Kanugas have the right of having the old covering and the turban at the head removed, and their new covering put on in their presence.

The henna is carried by the head of each of the said families barefooted with bands of Fakirs, of dancing girls, and of musicians. The procession is like a marriage procession, and the person carrying the platter containing henna and scents, generally walks with the musicians who bring up the rear of the Fakirs and the dancing girls. On the 21st of Shaiban (the day of wasl or union) there is the usual Mubarikbadi (congratulations) as at a marriage.

The shrine is illuminated during the fair days and the necessary oil is supplied by the said families. The Sayads send only a seer (2 lbs.) or so on their day, but the Miranis and the Kaunga families send each 10 seers. These Hindu families light the lamps themselves.

Numerous crackers and rockets are discharged when the ceremony goes on, and in the two outer courtyards dancing and singing and music (Dhamals) are kept up on all the three days. But the morning hours are specially set apart for them, and on the 18th of Shaiban the Dhamal lasts during those hours for a watch and a quarter, *i.e.* for 3 hours and 45 minutes, on the 19th it lasts for a watch and three quarters, and on the 20th it lasts for two watches and a quarter. The Fakirs shout "Jhule Lall Mast Kalandar Jiwe Lall Mast Kalandar (Hail to the God—intoxicated Kalandar—may the God-intoxicated Kalandar live for ever) often drown the music.

The head of the tomb is to the north, and is surmounted by a gorgeous turban. Towards the west, on a shelf, are seen a Shaligram and another stone which is said to be a symbol of the Narsingha Avatar. The Mussulman custodians of the shrine call the two stones *Makhanmani* (butter and

bread) but the Hindus say they were found in the Lall's wallet on his death and they strenuosly maintain that he was no other than Bhartri Hari himself in a fresh incarnation. On every new moon, they visit the shrine just as the Mahommedans visit it on every Friday night (*i.e.* according to us, Thursday night), and curious stories are afloat as to how a Mussulman, who stole the two stones, was directed by the Lall to turn back when he reached the mound of red sand south of Sehwan and to replace the symbols. It is very likely that an attempt was made to steal them, for they have been now rivetted fast in a bed of molten lead on the shelf. There is also a story of Gusai Harnamgir (a successor of Anandgir who belonged to the Giri followers of Shankaracharya) visiting the shrine every day with a Kamandalu full of liquid Bhang. The Kamandalu of Hindu Sannyasis resembles the *Kishti* which the great Kalandar is said to have borne himself in his travels, and Bhang—it is well-known—is sacred to Shiva—the favourite god of Bhartri. The Gusai visited the shrine as Bhartri's, and the Mussulmans appear to have felt rather scandalised by the offering of Bhang. The Gusai used merely to lift up the Kamandalu as an offering—stand rapt in meditation for a time, and then take it away. But one day, it is said, the Mussulmans didn't allow him to enter the shrine. Whereupon, standing in the courtyard he let loose his long matted hair which turned at once into snakes to the great alarm of the Mussulmans, and this miracle secured him access to the shrine at once and for ever. Gusai Harnamgir died only a few years ago.

Sehwan is said to be the seat of a lakh and a quarter of saints (Pirs). It is certainly full of graveyards and old mausoleums, and boasts of a fort ascribed by the Sindhis to Jayadratha, and by some English savants to Alexander the Great. It is said that when Lall Shahbaz arrived at this ancient town, he put up in the open near the site of the present shrine, whereon, in those days, stood the houses of several harlots. The presence of the saint had the effect of depriving these fallen creatures of their livelihood, for, it is said whoever went to them became for the time being a woman. It is also said that Pir Chuto, the regnant saint of those days at Sehwan, sent to the Kalandar a cup brimful of milk as a sign that Sehwan was as brimful of Pirs as that cup of milk, and there was no room for him. The Kalandar merely took out a rose from his wallet and put it on the milk, and sent the cup back with his compliments. He meant that just as a rose could float on the brimming milk, he also could crown the apex of the citadel of saintdom at Sehwan.

Chuto Pir, according to the legend current in Sindh, was so powerful that criminals stood self-confest before him, for they had only to take a little water from his pitcher, and if they were really guilty a fish would instantly leap out from their abdomen. It is also asserted that Pir Chuto

burnt no oil in his lamps but only water. The Kalandar, however, told the Pir that miracles were spiritually an obstruction, and the Pir, thereafter, reverted to the ways of ordinary human life. His shrine is supplied with oil from the Kalandar's, according, it is said, to a promise given by the latter.

If the Kalandar really deprecated miracles, it is difficult to understand why he himself performed them so often. For example, it is popularly believed that he saved the life of Bahawal Hak by a miracle. The two friends with Shekh Farid and Shekh Jalal two other saints—while returning from Mecca encamped once, it is said, outside a town, and Bahawal Hak who it is said was as beautiful as Joseph (*brif.*), went into it in order to bring some food. He took wheat flour to a house, and asked the lady of the house to do the baking for him. The lady was very handsome, and behaved like Potiphar's wife. But Bahawal Hak on refusing her overtures was not merely falsely charged with violence, but sentenced to be hanged. When, however, he was taken to the gibbet, Shekh Farid assumed the form of a deer with golden horns, and Shekh Jalal the form of a lion, in order to distract the attention of the crowd, while the Kalandar converted himself into an eagle, and pouncing upon the gibbet wrested Bahawal Hak from the hands of the astonished hangman, and soared aloft with his friend. Besides this miracle there are a host of others, *e.g.*, the conversion of pebbles into rubies for the benefit of a poor woodsman, and the conversion of the Kalandar's *Kishti* into a boat for ferrying over his friends to the mansion of a great spiritual teacher.

Passing from the saint's miracles to his poetry, we can't but admit that this latter has a highly spiritual flavour. At times, the poet rises even to ecstatic heights, and sounds a much higher note than even Hafiz or Shams Tabriz. The references to wine and wine-sellers are very few, and their meaning is quite transparent. In the third Skanda of the Bhágavata, Kapila tells Devahuti that just as a drunken person forgets if he has clothes on or not, so a God-intoxicated man forgets if he has a body or not. The wine of the Sufis means nothing more than this intoxication. But unfortunately there are some among them who, losing patience, actually resort to wine or intoxicating drugs in order to produce spiritual intoxication, and like Hazuri they come to a sad pass.

For such men our poet has many warnings. He tells them, in no uncertain voice and with great earnestness, that the path to spirituality is an uphill path, and that the goal can't be attained without absolute selfishness and absolute realization of the Soul of the Universe. Those who attain it, may read the Koran or put on the sacred thread, go to mosques or attend *mandirs*, but they remain selfless (*bikhud*) and intoxicated with the wine of unity (*wahdat*). They dive deep for pearls into the ocean of Being, and a single pearl brought up by them is worth more

than all the seven kingdoms (*Haft Iklim*) under the sun. They can transport themselves to the times of Ibrahim or Ismail or Moses or Usif or to the age of Alexander or walk with the angel of the water of life—Khizr—or with Gabriel in heaven. To them the secret of God stands revealed, and they themselves are the secret of God (*Sirr Allah*). To them he is ever Hazir and Nazir—ever present and ever seeing—for their self is absent, and the blinding veil of egotism is no longer on their eyes. Their heart is His house though He is *murgh la makan* the heavenly bird without a house. To those who love Him, speech is as autumnal winds while silence is as spring. Their souls, like moths, sacrifice themselves to Light, and like Bulbuls ever sing sweetly to the Divine Rose springing in the heart of selflessness. They know their Prison and their Liberator, and they know that Suffering leads to Bliss. They remember their Heavenly Friend every minute of their lives, and see none but Him in all they see. Like the musk-deer they have the heavenly fragrance in them, but unlike him they smell it also. They draw rose-water from the petals of their own blossoms, and gems from the depths of their own silence. Therefore says the poet-saint :—

فنا اندر فنا مي باش هردم بقا اندر بقا مي باش هردم

(Be every moment dead unto the things of death, and abide every moment in the Ever-abiding.)

In the Vairag Shatakam of Bhartri Hari it will be admitted there is much which resembles these ideas. Like the great Kalandar, Bhartri cares not for the world. The earth is his bed, his arms are his pillows, the atmosphere is his clothes, the air is his fan, the moon is his lamp, and Wiraktata (non-attachment) is his wife. To the knower and lover of Brahma, the three worlds are like a fish to the ocean. The birds of the air sit in his lap and drink the tears of his separation. He calls upon his mother Earth, his father Wayu (or the Winds), his friend Light, his kinsman Water, and his brother Ether to take him to his Lord and theirs. He sees no difference between Vishnu and Shiva though for his meditation he may prefer one form to the other (Bhartri himself preferred Shiva's). He realizes that the sabstratum of his Being is All in All, and the fetters of the world then fall off and he is free.

The Hindus, therefore, are not far wrong in worshipping the Kalandar as Bhartri Hari, for he represents clearly the same School of thought. I may add that there is a manuscript Persian book called Diwan Rājā which is ascribed to Lall Shahbaz, and it may be that this has also helped to strengthen the popular belief that the Kalandar was an incarnation of Raja Bhartri Hari.

I trust this introduction will explain the great attraction which what

the Hindus call *Sannyas* and what the Mahommedans call *Fakiri* possesses for ardent minds, and throw some light on the following authentic story.

The Strange Story of Hazuriwahad-Sidhu

(as narrated to a Court of Session.)

Hazuri at the Mud Gorge.

I was born at Mogaghel in the Ferozpur Taluka of the Ferozpur District in the Panjaub. My father was of the Mochi tribe. He earned his bread by shoe-making and sometimes by cultivating land. I am now thirty-five. I left my home about 18 years ago to find some employment. I came to the Nari Mud Gorge and worked there on daily wages. But I fell seriously ill—and my father came all the way to the Gorge to fetch me back to Mogaghel. My mother Kauri—who is still alive—nursed me back into health. But my father died shortly after my recovery, and the pangs of hunger drove me once more to the Mud Gorge where I was sure of employment.

Hazuri in the Mach Hills.

From the Gorge I went to the Mach Hills. They are 80 miles from Rindli, and are near the Bolan Pass. I quarried in the rocks at Mach for about twelve years—and what do I quarry in now? I am now a Fakir. You ask me why I became a Fakir? It is a long story, a very long one.

Hazuri learns a Kalām or a mystic utterance in the Mach Hills.

I came across a holy man Nathu Shah by name. He taught me to repeat the following Kalām :—

انت الهادي انا الحق
سبيل الهادي الله هو
يا محمد يا رسول
يا محمد يا رسول
ميں اكيلا منزل دور
تيري پيڑي سان دا پور
پار لگادو نبي رسول

'No guide have I but Thou, O Thou Great 'I am.'
Thou art the Guide of the Path, Thou art the only God.
O Muhammad, O (High) Messenger.
O Muhammad, O (High) Messenger.
I am alone and the goal is far off.

Thine is the ferry, we are the passengers.
Ferry us over O Prophet, Oh (High) Messenger.

And he told me : "Repeat this Kalām. Repeat it with thy heart and soul. Let it repeat itself in your blood and breath and brain, and you will have a vision of the Prophet. When you have that heatific vision, ask for three things. Say : "O Prophet, when I die let me have no trouble, when I get into the grave let me have no trouble, when I come to the Alsarat bridge, sharp as a razor, thin as a hair, may I have no trouble, and may I be under the standard of Imam Hussen." I asked Nathu Shah : "When I meet the Prophet, by what sign am I to make out that he is the Prophet ;" and Nathu Shah said : "Son, the sign is that when you see the prophet, the whole world and all it contains will become as white as a well-washed cloth."

Hazuri wants to become a Fakir. His first disappointment.

I said to myself : "I have served my belly so long. Let me see if there is anything in this *Kalām*." I continued to quarry for five days more, and I repeated the Kalām with fervour. On the sixth day, a Nanga Fakir came and sat in my hut. He had only a single cloth on, one-half of which was on his loins, while the other half was on the upper part of his body. I told him : "Sir, make me a Fakir." He said : "Very well, come with me." The people in the quarries told me to remain with them, and I would get a Rupee per day as wages. But I said "No." I had done twenty-five Rupees worth of work, and getting those 25 Rs., I spent 7 Rs. on tickets, and I and the Fakir came by train to Rindli. We then paid a Rupee more, and by a ballast train reached Sibi. There I took tickets for Karachi, by desire of the Sayad, and at Karachi I handed over my turban and my other clothes to him. The Sayad went to the Bazar, and on his return I asked him what he had done with them. He said : "I have given them away in the name of God." I said "you have done well." But shortly afterwards some policeman came, and asked the Sayad for how much he had sold the clothes, and he said 'for a Rupee and a quarter.' I then told him : "Why did you tell a lie? You said you had given them away in the name of God. I am no longer going to be your associate. Go away at once." I then gave up the Sayad's company, and began to work at Karachi in order to earn my livelihood.

The resolve renewed. Hazuri at Mangho Pir.

Then it occurred to me once more : "You were working before, and you have taken to work again. Become a Fakir." Once more I gave away all my belongings in the name of God, except a *chādar* and a loin-cloth, and went to Mangho Pir. I was ashamed to beg, and for 10 days I lived on raw dates.

Hazuri's first dream.

Then in a dream I got an order to go to Pir Abbas at Nangar Tatta. I hadn't heard the Pir's name before. I heard it for the first time in my dream. I went to a shrine called after Pir Abbas at Nangar Tatta, and there I took to repeating the *Kalām* of Nathu Shah. I used to repeat it at night, and fall asleep in the early hours of the morning.

Hazuri receives a kick. His second disappointment.

Nothing happened during six days. But on the seventh, while I was asleep I received a kick from a booted figure who said: "You are not fit for a Fakir's life. Go and work. In the morning hours when you should pray, you are asleep!" I saw the booted figure in a dream, but when I *awoke* I found the mark of the blow he had given me, and I have it still on my hips. I fell ill, and felt pain in my bones and wasn't able to walk. Then some Fakirs in the name of *Allah* took me to the Hospital at Tatta. For fourteen days I was there, and I was fed.

Hazuri hears a voice.

After the fourteen days, I heard a voice in my dream saying: "Go to the shrine of Pir Abdul Wahāb. Hazrat Pir Dastagir's son." I hadn't heard the name of Pir Abdul Wahāb before. The voice said the shrine was in the Koris' Mahla at Tatta. I went to that shrine, and an order came to me there in a dream: "Plant a garden here, and water it, and you will obtain *Fakiri*." For ten months, therefore, I planted trees and watered them. The shrine was desolate and lonely when I went thither, and I did my best to make it smile a little.

Hazuri's food eaten by a dog.

After the ten months, the word came to me in a dream: "Your food has been eaten by a dog," and I understood my share of *Fakiri* was gone, but I didn't understand why I had lost it.

Hazuri in the slough of despond.

Then the thought occurred to me: "Why should you live, you had better die." There are mausoleum and graves within 24 miles of Tatta, and I wandered among them. It occurred to me: "Take no food, drink no water and no *bhang*. It is better for you to die." For three days I remained at Abdullah Shah's *makān* and took no water or food during that period.

A CHEERING DREAM.

Then a voice said to me in a dream: "Your service is accepted. Go to the Kalandar's shrine at Sehwan." My heart leapt with joy, and I went on foot up to Hala, and there met a Fakir, Sādikali, who accompanied me to a Railway Station, and paid nine annas for my ticket. We both got into a train, and arrived at Sehwan. The annual fair at the shrine of the Kalandar was in full swing, and Sādikali ordered me to bring water to the Fakirs in the fair, and I went on distributing water to them. I did this for three days.

JOURNEY TO GĀJĪ PĪR IN THE NAI GAJ HILLS.

Once more a word came to me in a dream. This time it was: "Go to Gājī Pīr," and I went to Gājī Pīr, and the Khalifa there told me to go to the village of *Suparda*, and I would get not one live Pir only, but a whole village full of such Pirs. Supardah is near *Bhān*, and it was 10 miles off. I left one morning, and reached it in the evening.

"GIVE UP YOUR LIFE AND YOU WILL GET FAKIRI."

I noticed a Sayad's flagstaff. It was a very big one, and I went and sat by it. A little boy Hussen Shah came there, and said to me: "Tell me all about yourself," and I told him everything. He then said: "If you give up your life, you will get Fakiri." I said: "I will give you my life." He said: "Don't give it to me: Give it to my father." He took me to his father, Juman Shah, who was hewing wood with an axe. I said: "Sir, give me the axe to hew wood, you are a Sayad." I then hewed wood for him, and he told me to take the faggots into his *Haveli*, (women's quarters). I said: "How can I go into your *Haveli?* I have no clothes on except this lūng (loin-cloth)." He said: "There is no privacy in my family. You are my son. Go in." I said to myself: "You have come here to gain *Fakiri*. But your lives are cast again among the things of the world, for here are children and women."

HAZURI'S HEAD AND BEARD CLEAN SHAVED.

The next evening Juman Shah told me: "Son, you had a dream at Mangho Pir. I met you there. You had a dream at Tatta. I met you there. You had a dream at the Kalandar's shrine. I met you there. You had a dream at Gājī Fakir's shrine. I met you there.* At four places you received orders. It was I who gave you those orders." I said: "Tell me of some sign. What sign did you give me." He said: "I gave

* It will be noticed that Hazuri has mentioned no dream at Gājī Fakir's shrine; but probably he had one there.

you a kick on the hips with my boots. That sign alone is sufficient." I had told everything to his son, including the kick. Juman Shah continued: "I will make you a *Talib* (seeker after God). I will make you a Fakir." He then had my head and beard clean shaved, and put a cloth round my neck to serve as a wallet, and made me a Fakir. He asked me if I would take to study. I replied in the affirmative. He then made me commit to memory the whole (spiritual) geneology of Kalandar Lall Shahbāz.

Fakiri a heavy burden. Hazuri goes through the ordeal of fire.

But still no vision came to me, and I said: "Oh my Murshid (spiritual guide), you have had my beard and head shaved, but I haven't gained *Fakiri*." He then said: "*Fakiri* is a heavy burden. It is a burden, son, you won't be able to bear." Then at night he lighted a bon-fire and said: "If you really seek *Fakiri*, fling yourself into this fire." I flung myself into it, but just as I fell into it, he cried out: "Get up, come out;" and I replied: "I have thrown myself into it, you may lift me up; I won't get up and won't come out." He then raised me up, but not before my right side had got singed.

A miraculous cure.

Next morning the villagers seeing the burns asked me: "How is it your whole side is scorched? Your Murshid apparently has no stuff in him." I then said to myself: "He, my Murshid, is a Sayad's son, what matters it if I burn to death at his behest." I then went to the Sayad's *Haveli*, and the Sayad, my Murshid, applied his spittle to my burns, and his gentle lady applied a little oil, and they were healed instantaneously. Only a small mark remained near my right shoulder.

The second ordeal, the ordeal of silence.

Then I told my Murshid: "Oh Murshid, I fell into the fire but I didn't get *Fakiri*." He said: "Do you sleep to-night and you will get *Fakiri*." I accordingly slept that night, and I dreamt that three corpses would be brought for burial in our cemetery, for my Murshid owned one, and the flagstaff was there, and his *Haveli* was only at a little distance from it.

In the morning, I told the village people of my dream, and really and truly only three corpses were brought to the cemetery for burial. Then my Murshid said: "Oh you rascal—you have been asking for *Fakiri* again and again, and I have given you only a little of it, and lo and

behold you begin to babble and to predict that only three persons would die in the village to-day. You are not fit for *Fakiri*. Go and live in the work-a-day world." But I did not leave him.

A DOG APPEARS AS A MAN.

Next night I had another dream. I saw a man who said, 'Give me your hand.' I gave it, and I awoke and found a dog's paw rested in my hand. It was my Murshid's dog, and my Murshid said: "You scape-grace, even my dog has the power of appearing to you as a man. Be on your guard, and restrain yourself and reveal nothing, if you want to be a Fakir."

ANOTHER TRIAL OF FAITH.

Some days later, I again told him: "I have seen many dreams, but you haven't given me *Fakiri*." He said: "Work and serve and I will give you *Fakiri*." I asked him what service he demanded of me, and he took out a sword, and said: "This is a Sayad's child, cut him up into pieces." The child was another Sayad's. I was about to cut him up when my Murshid called out: "Don't" and I didn't, and came back to the Murshid.

'WORK AND SERVE.'

There were four Sayads' *Havelis* in all, namely, my Murshid's, Haji Shah's, Taj Mahmad's and Ibrahim Shah's. My Murshid had only two sons, Ahmad Shah and Hussen Shah. Haji Shah, who was my Murshid's brother, had four sons, Parial Shah, Madari Shah, Maluk Shah and Abulfatah. Taj Mahmad had two sons Mehr Shah and Kasimali Shah; and Ibrahim Shah had also two sons, Bhawan Shah and Mahmud Jamal. Taj Mahmad and Ibrahim Shah were kinsmen of my Murshid. There was a fifth Sayad, Mahmad Shah, who was a *talib* (disciple) of my Murshid. I had to fetch water and fuel for all the four *Havelis*, and live by begging. I served them for three years or two and a half.

HAZURI DIES AND COMES TO LIFE AGAIN.

At the end of that period, my Murshid told me one day: "Come here that I may kill you." I said: "Very well, kill me." I lay down by his fire-place. His family were there. As I lay down he drew his sword, and I fell into a trance, and in that trance I saw a fair held by women in which there were only three or four men, and all the men and women were saying: "There is no man and there is no woman. He gets *Fakiri* who sees the One in both and both in the One." Then there was a shout: "He who wants Fakiri, let him take off his lūng, let him make his soul

naked as a new-born babe." I took off my lūng in the trance, and I awoke and found it was still on me. I hadn't seen my mother or any *Fakiri* in the dream.

Allah Ali. Juman Jati Juman Bukhari.

When I awoke I found myself in the midst of the Sayad's family. and Ahmed Shah one of my Murshid's sons, said: "I am your Allah, I am Ali." I said: "Very well. If you are my Allah, if you are Ali, you are so." Allah and Ali are one and the same. Hussen said: "I am the youth who met you at Mach."* My Murshid said: "I was Juman Jati in my former birth, and my mausoleum is at Sehwan. I am now Juman Bukhari," I said: "Is that true?" He said: "Yes it is the truth." I then said: "Oh Murshid, I became your Murid (disciple) in order to have a vision of the Prophet. Up to date I have had no such vision." He said: "Son, you will meet the Prophet," and he directed me to go out of the village and beg. I said: "Where should I go." He said: "Go to Bhan."

Hazuri falls.

So I went to Bhan, and got about four annas by begging, and instead of returning to my Murshid, I spent them on *Bhang* and *Charash* (Indian Hemp) and feeding a man more distressed than myself. I passed a day and a night at Bhan, and proceeded thence to Dadu, and after a stay of two days there, to Ranipur, and thence to Khyrpur and Baburloi.

"What is the voice coming from God's godhead."

In the pedigree taught to me by Juman Shah occurred the name of Malang Shah. You want me to recite the pedigree. I will recite it, but you must not take it down.† Well, then, at Baburloi, I saw an old Fakir with his beard and head shaved, and with only a loin-cloth on, and his

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* Hazuri, it will be observed, has said nothing on this point in the foregoing chronicle.

† The recitation ran thus: "Whose *talib* is Hazuri? Allah's and the Kalma's: Juman Shah's. Whose *talib* is Juman Shah? Allah's and the Kalma's: Zulfikar's (Kalma is the famous Mahommedan creed: 'There is no God but God and Muhammad is His Prophet).' The same question was put about everyone of the spiritual hierarchy, everyone was called the *talib* of Allah and of the Kalma, and the name of his spiritual father was then mentioned. The pedigree was a long one and its recitation occupied about half an hour. Malang Shah was Juman Shah's Murshid's Murshid who traced his spiritual descent from Lall Shahbaz. Lall Shahbaz himself was spiritually descended from a long line of saints mentioned in the pedigree. Hazuri objected to its being reduced to writing as the correct recitation of the pedigree is apparently a pass word or Shibboleth among *Kalandars*.

name was Malang Shah. He was sitting in a Saint's shrine situated in a cemetery, and I sojourned with him for three or four days. Then one night he said: "What is the voice coming from God's godhead." I said: "Oh Murshid, I hear nothing." He said: "Son, you are impetuous and impatient. Fakiri is yet at a great distance from you." He then told me that for 12 months he had, at Shikarpur, taken no food except milk. I said: "Sir, I am off." He said, "Where to," and I replied "to Rohri."

In the slough again.

At Rohri, I went to the shrine of Sakhi Dīn Panāh, and divested myself of all the outward insignia of *Fakiri*, the *nafil* or small trump, the *manio* or coral, the Kangan of *hartal* or armlets of yellow orpiment, and one or two *gānās* or threads worn round my neck, which my Murshid had given me. I gave them to the Fakir at the said shrine, and I told him: "I am going, I won't take food and I will die. I haven't received *Fakiri*. These things are of no use to me." My old clothes I gave away to sweepers, and with nothing but a loin-cloth on me, I came to Shikarpur last winter.

A fourteen days' fast and a vision of Kalandars, Hindu and Mahommedan.

There is a Hindu temple near Alif Shah's tomb and the Shahi Bāgh, and by that temple I fasted for fourteen days, taking only dates, and sometimes a little milk if it was brought to me. On the fourteenth day a voice came to me in a dream: "Arise, you will now have a vision of the Prophet." In the dream I beheld a fair in which were all my Murshids from the first to the last, all the Murshids named in the pedigree. I rejoiced to see them, but two Hindus came up and beat me with a club saying: "Get up, you have sat near our door and caused sin to defile us. Get up and we will show you the Prophet." The Hindus wore coarse black sack-cloth, and they had the appearance of Kalandars. I said to them, in my dream: "You have beaten me, and I have starved. Tell me where I can meet him." They said: "Go to Alahrakhio Nidhān Khan's village, and there you will see the Prophet."

Hazuri nurses a sick Kalandar.

I made inquiries and found my way to that village which was 10 or 12 miles from Jāgan, and 6 miles from Jacobabad. I went to Alahrakhio Nidhān Khan's *otak*, and there I found a Fakir, Miskin Shah, who was lying very ill. I removed his ejecta and tidied him and nursed him well. Late at night he asked for a little water, and I gave it to him. He then passed away.

A Kalandar's belongings.

Alahrakhio gave me all his things, namely, a pair of tongs, a *Kishti* (a boat-like bowl for begging), a rosary, a cup, a kettle, a *lota* (water-jug), a blanket, three quilts, a cot, thirteen *darries* of grain, also a *nafil* (trump). When I got these things, the Baniyas said that Miskin Shah was indebted to them in 5 Rs., and I gave them 5 Rs. worth of grain. Two *darries* fetched a Rupee. I gave the *Kishti* to a man who, in the name of God, asked for it, and I gave away all the other things also except the *nafil* and the kettle which I left in Nidhan Khan's *otak*.

Hazuri becomes a Water-carrier in the name of the Lord.

I said to myself: "You gained these things, but not yet the vision of the Prophet. Your master has told you everything, will be like white cloth, and there will be light when the vision comes." Nathu Shah had told me so. It then occurred to me: "Fetch water for people: That way you will get the vision;" and at four *otaks*, Nidhan Khan's, Dilmurad's, Alisher's and Mubarak Khan's, I used to fill the earthen pitchers, fourteen in all. I used also to give help to both Hindus and Mussulmans in drawing water from a well which was about 100 paces or so from Nidhan's *otak*. And for three months I performed this service.

Hazuri sees everything white in the village of prayer.

Then one day when I sat face to face with one Abdul Razak Sayad (who had an *otak* near the four *otaks* and whom also I used to serve) I saw everything white. I used to beg *charash* for the Sayad, and to pound Bhang for him and to shampoo him. He used to drink 5 or 6 annas worth of Bhang every day; and he used to abuse me and say: "Go away from my house," but I went on serving him, for I had great faith in him. You ask why. Hazrat Dastagir had eleven sons,* Abdul Razak, Abdul Wahab, Abdul Aziz, Abdul Jabar, Abdul Ghafur, Shamsuldin, Abdullah Shah, Isa, Ibrahim, Mahmad, Yahaya, Abdul Ghani, Halima. There might have been thirteen if the names I have given are thirteen. I haven't been allowed to smoke in the Jail, and my memory too may be at fault. At Nagar Tatta the shrine was Abdul Wahāb's, and there I had been told I would see live Pirs. So I put faith in Abdul Razak. Alahrakhio's village was also called Nimāzān Gam (or the village of prayer).

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* Dastagir is the name of Abdul Kadir Gilani who was 11th in descent from Hassan. He had only two sons Ali Muhammad and Abdul Wahāb.

Hazuri is told to keep a vigil.

I saw everything white, but I didn't see the Prophet. So I said to Abdul Razak: "Why is it I don't get *Fakiri*." He said: "Go to Rohri. There you will find a cave of Shah Shakar Ganj. Do you keep a vigil there for seventeen days."

Three Sharai (legal) gashes.

I then started for Rohri. I came to Shikarpur and passed two or three nights in the Imambara. Leaving Shikarpur I came to the village of Hanbāh near Chak on my way to Rohri, and as a fair was being held at the village, I passed two nights at Mahmud Shah's *otak*. On the third day, I went to the *makān* of the Sufis. There I met at mid-day one Shauk Ali Wd. Bakshali Khukhrani, a native of the Makhi Belo in the Singhoro Taluka and a Murid of Kadur Muhiyuddin Mahbub Subhani Dastagir of Karbala. Faiz Mahomed Gilani, Dastagir's Khalifa, lived at Hambāh. Shauk Ali's father was a Murid of Mian Abdul Satar, a Sufi Fakir at Jhok who was himself a Murid of Dastagir. Shauk Ali used to graze cattle before he became a Fakir. The Sufi Fakirs of Jhok taught him to repeat the name of God, and he was in their society for two or three years before he turned his thoughts to Allah and started on a tour. He had not seen God as He is, or seen the Spirit of God in himself, the great Inbreathing Spirit, or ever enjoyed the ecstatic vision, and after conversing with me apart and hearing of the miracles my Murshid had wrought, he told me: "Oh Fakir, give me a little of your spiritual earnings and of your Murshid's spiritual earnings. Let me have only 2 Rupees out of your wealth." I said: "I haven't a pie, my son. Go fetch water for the thirsty for 12 months together. If you can't do that, go beg bread and feed the poor and dogs, and Maula Ali will give you wealth." He said: "I don't want to work for 12 months. I want the wealth at once." I said: "My Murshid is omnipresent. If I give you three sharai gashes on the throat, you will be ushered into his presence, into the presence of Maula Ali, into the presence of Allah and you can then obtain as much treasure as you like." My Murshid had told me that he had drawn his sword three times * across my throat according to Sharai (law) at the time I had lain by the fire-place. I had reposed complete faith in him. So I had felt no pain, and by my Murshid's power, there was no cut visible. I wanted to try Shauk Ali's faith. Had he allowed me to give him the third cut, he would have seen his soul, and he would have risen from his body, and would have come to life again. My Murshid was present with

* Mahommedan butchers when slaughtering animals cry out: "In the name of the Lord the most Merciful and Compassionate" and then give three cuts.

me everywhere and his mystic power is infinite. He is with me here. He was with me when I led Shauk Ali to a tamarisk tree on the southern bank of the Hanbāh wah, and took off the knife hanging from a leather girdle round his neck, and used by him generally for cutting mangoes and peeling onions. It was not sharp and was somewhat indented. I told him I would sever his throat with three cuts according to law. He lay down under the tree and closed his eyes, and I drew the knife once across his throat, and he said nothing. I drew it a second time and he cried out, "Stop, I don't want to see Allah or Ali" and I stopped at once, and said: "Oh you unfortunate one, if you want me to stop, I stop." * Allah and Ali are one and the same, and our Murshid is our God. Yes my God is Juman Shah.

Hazuri is arrested.

What did Shaukali do? Why he walked up with me to a *pipal* tree south of the *makan* and lay down there while I went into the *makan*. The villagers put antimony into his wound to stop the bleeding, and they informed the Police. Shaukali made no complaint against me, but I was arrested and he was taken to a Hospital.

Bhang and Charash.

Used I to take a good deal of *Bhang* and *Charash?* O yes, latterly, I took a deal of both at Allahrakhio's, and at Shikarpur and at Mahmad Shah's fair. At Allahrakhio's I used to get intoxicated with *Bhang*, and take 2 or 2½ annas worth of *Charash*. For days and nights sometimes, I smoked *charash* so as to get intoxicated, for during my intoxication little boys with the faces of cherubim used to appear before me and prattle sweetly. Sometimes I used to see a fire as it were in my heart. No, I usedn't to see any cherubim, I used to hear their sweet voices. I see only my Murshid. I see him only when I am in straits. He is now hearing what I say. I don't see him, but I hear his voice calling 'Hazuri Fakir.' He doesn't say "you have done an evil deed." He says: "What do you care?"

"If you want to hang me, hang me soon."

You ask how much of *bhang* and *charash* I took on the day I tried the faith of that lily-livered, craven-hearted Fakir Shaukali. Why, no end of

* Shauk Ali who corroborated Hazuri said: "I have seen Jugglers drawing a knife across a boy's throat, and I have seen blood issue and then the Juggler's incantations put a stop to the blood, and there is not even a scar seen and the boy operated upon turns out as well as before. That is done by means of illusions. I had understood I would feel no pain at all. As soon as I felt pain I cried out 'Stop' and he stopped."

bhang certainly. Whoever pounded *bhang* and offered it to me had no refusal from me: I took all that was given. If you want to hang me, hang me soon. That is all I want. What have I to do with the outer world?

Hazuri forswears Bhang and Charash and goes to a cave.

Can I give up both *bhang* and *charash?* Yes, I can, provided I am allowed to smoke tobacco. If I can't get all the three, let me have at least tobacco. Why doesn't my Murshid supply me with tobacco? He soars to heaven on the wings of ecstasy. What has he to do with such things? Is it possible for me, you ask, to forswear *bhang* and *charash* in the name of all the Murshids whose names I have recited? Yes, I forswear both in the presence of all my Murshids. The police arrested me though Shaukali made no complaint. I have been in jail. I was told I had attempted to murder Shaukali. But the doctor said I hadn't injured the windpipe or the gullet or any important blood vessel but had merely divided some of the small arteries. I caused only a little hurt to Shaukali by his consent to try his faith, and you say I can go. I go to the cave of Shakarganj to keep my vigil and promise once more never to take *bhang* or *charash*. So help me my Murshid! So help me Ali! So help me Allah!

"Give up thy life if thou wouldst live"

"Raise the stone and there thou shalt find me: cleave the wood and there am I."

(Recently discovered sayings of Christ.)

طالب الدنيا مخنث طالب العقبى مونث

طالب المولى مذكر

Whoso seeketh the world is of the lowest (spiritual) gender. Whoso seeketh heaven is feminine. Whoso seeketh the Lord is masculine.—(*Sufi Proverb*).

IV.—*Notes on Tamil Words and Ways.*—By A. C. Clayton.

[Received 18th October, 1898; Read 4th January, 1899.]

At the last census, the number of persons speaking Tamil was returned as fifteen millions, but it must not be thought these all constitute one race. On the contrary the people speaking Tamil may be divided into three very distinct classes. There are Brāhmans with Āryan blood in their veins, who use many Sanskrit roots and affect a Sanskrit pronunciation of Sanskrit words which have been naturalised in Tamil and have acquired a new pronunciation in the process. For instance *Bhūmi* (earth) is *Būmi* in ordinary Tamil, and *Samudra* (sea) is *Samuttiram*, but many Brāhmans keep to the Sanskrit pronunciation of the stem, though they add the Tamil terminations. Next to the Brāhmans comes the great mass of Vellālas, who are a most highly respected agricultural class, chiefly Saivites, and who speak very pure Tamil, and no other language. Indeed, there is an old Tamil, saying that 'a Brāhman's Tamil and a Vellālan's Sanskrit are both full of faults'—(*Pārppān Tamirum Vellālan Samskiruthamum varuvaru*). Below these come the mass of labourers, chiefly Parayans, and the jungle tribes. Though the greatest and most beautiful of all Tamil books, the Kural, was the work of a Parayan, there is little trace of beauty in the speech of modern Parayans, and the language of Vēdans and Villis and other jungle-folk is hopelessly corrupt. Of course this does not profess to be a complete account of the Tamils, but roughly speaking the three-fold distinction that I have indicated must be observed, otherwise considerable confusion will occur, and the customs which the now Aryanised Brāhmans have borrowed from original Brāhman invaders may be mistaken for true Dravidian, or, on the other hand, the fears and beliefs of the Villi and the Parayan may be confused with the higher faith of the Vellālan or Brāhman. In dealing with Tamil customs and proverbs, therefore, it is of the utmost moment to find out by which class or classes of the Tamil community they are observed or used.

A very peculiar festival is observed at a village called Periyapālayam some sixteen miles from Madras. It was formerly attended by Chaklis (leather-dressers) Pallis and Parayans only, but I am told that the number of Vellālans and even Brāhmans who attend the festival has considerably increased of late years. The festival is held in honour of a goddess known as Bavaniyammāl, and the homage rendered to her is two-fold: her worshippers sacrifice some thousands of sheep on the river bank outside her temple, and, entirely divesting themselves of their garments and covering themselves with bunches of the leaves of the *neem* tree, they perambulate the temple. Except on the five Sundays, usually in July and August, on which the

festival is held, the goddess is comparatively forsaken and is said to be a vegetarian, but on the five festival Sundays she is said to be as greedy for flesh as a leather-dresser's wife, and a story is told to account for this which is practically as follows :—

There was once a *rishi* who lived on the banks of the Periyapalayam river with his wife Bavani. Every morning Bavani used to bathe in the river and bring back water for the use of the household. But she never took any vessel with her in which to bring the water home, for she was so chaste, that she could form a water-pot out of the dry river sand and take water home in it. But one day, while she was bathing, she saw the reflection of Indra's face in the water, and could not help admiring it. When she returned to the bank of the river, and tried to form her water-pot of sand as usual, she could not do so, for her admiration of Indra had been the ruin of her power, and she went home sadly to fetch a brass water-pot. Her husband saw her carrying the brass pot to the river, and at once suspected her of unchastity, and calling his son ordered him to strike off Bavani's head with his sword. It was in vain that the son tried to avoid the hateful task ; he had to obey his father, but he was so agitated by his feelings that when at last he struck at his mother, he not only cut off her head, but that of a leather-dresser's wife who stood near. The two bodies lay side by side. The *rishi* was so pleased with his son's obedience that he promised him any favour that he should ask. To his great anger his son at once begged that his mother might be brought to life again, but he was compelled to keep his word, and told his son that if he put his mother's head on her trunk she would live. The son tried to do so, but in his haste took up the head of the leather-dresser's wife, and put that on Bavani's body. Leather-dressers are flesh-eaters, and so it happens that on the appointed festival days sheep and cocks are offered to the goddess. It may be noted that the sheep must be killed at one blow. Two blows would defile it as a sacrifice.

As to the wearing of the *neem* leaves I have been unable to get any explanation. The people who do it, do it in fulfilment of a vow made in time of sickness. Thus a woman ill of fever will vow 'to wear *neem* at Periyapālayam' if she recover ; or a man with dysentery will make the same vow. In some cases a villager will make the vow on behalf of a sick cow, and the animal will be brought and bathed in the river, and clad in *neem* leaves and led round the temple, just like any other worshipper. The act is a thanksgiving for mercies received, and is not an attempt to propitiate the favour of the deity. It thus differs from somewhat similar scenes elsewhere. It is said, for instance, that at a shrine some distance from Shimoga, in the Mysore State, women walk round the temple completely naked, but there the object is to obtain children, not to give thanks, and the ceremony

is performed by very few; whilst at Periyapālyam *neem* is worn by hundreds. The *neem* is chosen for several reasons. Its thick foliage makes it a very good covering, its holiness makes it particularly suitable for use at a festival, it is extremely plentiful at that season of the year, and very common at Periyapālayam. On the other hand it contains a bitter oil and gives off a bitter smell and many of those who wear it suffer severely from nausea, the more so as the bathing in the river and the dressing in *neem* and the procession round the temple must all be done fasting.

The *neem* is put to quite another use in parts of this District. When cholera is about, people of all classes cut down small branches of the *neem*, and some lengths of a thin, jointed, creeping, cactus-like plant generally found growing near prickly-pear, called *perandei* in Tamil. These are put in all the pathways leading from infected villages. The cholera-goddess, sometimes called Gangamāl, (Ganga-māi?) must journey on the paths, she cannot go across country, and the holy *neem* and the *perandei* will stop her, as she cannot pass by either. I do not profess to give the rationale of this, but the custom which I have often noticed is of interest in the study of the beliefs connected with sacred trees. I am not aware that the *perandei* is used in any other ceremonies.

Perhaps I should add that the *neem* tree is called *veppamaram* in Tamil, and is generally known to English people in South-India as the Margosa.*

Azadirachta indica. Ed.

V.—*Note on a sacred tank at Amolar, tahsil Chhitramau, district Farukhabad.*—*By* Charles A. Silberrad, B.A., B.Sc., I.C.S.

[Received 26th October, 1898; Read 4th January, 1899.]

On the north side of Amolar is a tank of very ordinary appearance but which is said to have the power of deciding between truth and falsehood. If two disputants bathe in it and then swear to their statements as correct at the shrine in the Zamindar's house near by, he who has sworn falsely will die within eight days. It is said that no one now-a-days will agree to this test. The tank is known as the Laḍhā Tāl.

This village of Amolar is a large and old one with an extensive 'khera.' The villagers say that Rāja Amrīk, "a Bhil," was the founder, that he was followed by the "Bihars," to whom are ascribed all 'kheras' in that part of Farukhābād district, but of whom no one seems to know more than the name and that they came "from the west." Then came one "Chathar Sāl, a Rājput."

Since then I have been transferred from the district and unable to make further inquiries. At Amolar occurs much carved red Agra stone of the usual character, and I found a small carved image in soap-stone, which the inhabitants called "Debi." What it really is I cannot say.

VI.—*Shagūn, or Rain-omen.*—*By* Charles A. Silberrad, B.A., B.Sc., I.C.S.

[Received 26th October, 1898; Read 4th January, 1899.]

The following account of a Shagūn or method of divining whether rain would fall or not was given me by the Tahsildar of Chhata (Lekhraj Singh Thakur) in the district of Muttra in the North-Western Provinces. It was performed at the end of September this year [1898] when owing to their having been no rain since early in the month and much less than the average up till then the cultivators began to feel anxious about the prospects of their Kharif harvest and Rabi sowings. The omen deduced was bad and so far (Oct. 24th) the prediction has turned out correct and there is little present prospect of it being otherwise.

I also give (in vernacular and English) two songs sung at the time of taking the omen. They are in the Braj dialect, with which I am personally not acquainted, but I have got them translated, I think, fairly accurately. Both are interesting as invocations of Indra and his queen, who, I am told, is taken very little heed of except when drought is threatening.

The first hymn is an ordinary invocation, the second partakes more of the nature of a reproach—the sum and substance of it being that now all nature is ready for the rain yet "thou who art the daughter of justice and bride in the family of mercy dost not bring it."

At night several old women, especially widows of good moral character, meet together and go towards a dhobi's (washerman) house singing songs of prayer, and when a short distance from the house the party stop and one only goes up to it and asks for water in a lamentable voice.* If the dhobi quickly complies with her request it is thought to be a good omen if not the contrary. Directly the dhobi having given her the water turns his back, the woman throws the pot on the ground saying that she would not take water of a dhobi, abuses him and returns to the other women. This same performance is then repeated at the houses of a 'Máli' (gardener), 'Kumhár' (potter) and 'Rangrez' (dyer).

Next at midnight these women go to some well outside the village and four of them stretch a 'chadhar' (sheet), the property of a good man, over the well. The rest go on singing, while one woman peeps into the well and calls for water. If the sound of a frog moving inside the well is heard it is considered a good omen.

On other occasions the oldest woman of the company goes to the well and sleeps beside it alone. If she dreams a good dream the omen is good.

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* This rain-compelling custom may be compared with a somewhat similar one amongst the Koch tribe of N. Bengal and Assam recorded by Damant in *Indian Antiquary, circa* 1875. Ed.

Hymn I.

Now come in torrents, O Indra Rāja in this land.
I will give thee, O Queen of the clouds, a sandal chair to sit upon, and wash thy feet with milk.
Now come in torrents, O Queen of clouds, in this land.
I will cook white rice, O Queen of clouds, for thee; I will cook husked dāl (split 'urd') and green mungorī (a preparation of 'mung') for thee;
Now come in torrents, O Queen of clouds, in this land.
I will prepare curd from brown buffaloes' milk and mix with it a scaleful of sugar.
Now come in torrents, O Queen of clouds, in this land.
I will heat a vessel full of ghī, and fry four 'pāpars' (thin cakes) in it for thee;
Now come in torrents, O Queen of clouds, in this land.
Now that thou hast been well supplied with good food, I tell thee where to rest and taste thy sweetmeats.
Now come in torrents, O Queen of clouds, in this land.
There is a lofty upper story made of bricks for thee, where a lamp burns all night long.
Now come in torrents, O Queen of clouds, in this land.
The day has dawned whilst I have been sleeping, how shall I go home?
Now come in torrents, O Queen of clouds, in this land.

Hymn II.

The plaster has left the walls (*i.e.*, through the intense heat and drought).
O shameless Queen of clouds, where hast thou gone?
Thy serpents have cast their skins,
O shameless Queen of clouds, where hast thou gone?
Thy peacocks have dropped their feathers,
O shameless Queen of clouds, where hast thou gone?
O thou that art the daughter of the Dharm Rāja (king of justice) and bride in the family of the Karuṇ Rāja (king of mercy),
O shameless Queen of clouds, where hast thou gone?

HYMN I.

ओम्

अब टुर बरसे हो इन्द्र राजा देश में

टेक

चन्दन चौकी मेघासन रानी बैठना दूध पखारूँ पाँव ॥ १

अब टुर बरसे हो मेघासन रानी देश में ॥

चावल राँधू हे मेघासन रानी ऊजरे हरी मँगौरी धोवा दाल

अब टुर बरसे हो मेघासन रानी देश में ॥

दूध जमाऊँ भूरी भेंस को पुर भर वूरा डार ॥

अब टुर बरसे हो मेघासन रानी देश में ॥

घिया भरताऊँ तामरो पापड़ सेकूँ चार जेउँ जूठो रस रह्यो पौठन ठौर बताव ॥

अब टुर बरसे हो मेघासन रानी ॥

ऊँची अटरिया ईंट की दिवल बरे सारी रात सोयो सकारे हे गयो अब घर कैसे जाऊँ ॥

अब टुर बरसे हो रानी देश में ॥

HYMN II.

भीतन छोड़े लेवना हे मेघासन भोड़न कित गयो ॥

तेरी साँपिन छोड़ी काँचरी हे मेघासन भोड़न कित गई ॥

तेरी मोरिन छोड़ी पँच हे मेघासन भोड़न कित गई ॥

वाह वाहरी धर्म्म रजा की तुधी कर्ण रजा की कुल वज्र

हे मेघासन भोड़न कित गई ॥ टेक

VII—*The Evil Eye and the Scaring of Ghosts.*—*By* E. N. Mahadeva Sastriar.

[Received 18th October, 1898; Read 4th January, 1899.]

A belief in the adverse influences of the evil eye is a very old factor in the social and religious life of this country. It is firmly believed that this influence affects the mineral, vegetable and animal kingdoms in various degrees and kinds according to the circumstances of each individual case.

It may be of interest to see how the animate and the inanimate are considered to be under the sway of the proverbial evil eye. According to the philosophy of perception generally accepted among the Hindu Vedantists, it is the soul, acting through the enormous mass of force called Prana, that sees and hears and smells, &c. This force in the shape of a psychic current receives and preserves all sense impressions which are answered by reflexive motor currents of the same Pranic force. In ordinary cases, such currents flow through the medium of the nerves so long as the destination of the current is not out of the body. But in the case of an eye-perception, there is a flow of some kind of electric, mesmeric or psychic current which has the mental constitution of the man who sees, for one end, and the object seen, for the other. If this current is any way interrupted, such as by a screen being placed between the eye and the object, there is no perception. Now the centre of the mental constitution, from which the psychic rays proceed is according to the Hindu Philosophy a conglomeration of forces and potentialities too numerous and various to be fully enumerated or described. But however a short, though indequate sketch of its constitution would throw a great deal of light into the obscure portions of this investigation.

The tendencies of the mind are the result of experiences in the onward journey of the soul in the economy of universal evolution. These are temporarily modified by environment and nourishment. The internal springs of human tendencies are not easily traceable. Still they could not have originated from nothing, and they could not have also originated from the same thing with so sharply defined distinctions between one another One mind is bent upon doing good to others at great sacrifice. Another mind wants to do something provided No. 1, is left untouched. There is a third that hates the first two for the very reason that they wish to do good to others and there are many fourths that are never so pleased as when they see others brought to misery. All the dramas that have ever been written including even those of the most recent Belgian Maeterlinck and all the novels that are still being daily printed off in steam-speed

machines, are only trying, with a great deal of commendable success, to delienate the varieties of the human mind, that unfathomable ocean of currents, forces and tendencies.

If a current that emanates from this mind and runs through the motor nerves governing the bicepts or calf muscles can strike a blow at or kick down the nearest sentient, a similar current issuing out of the same mind but proceeding through another channel may be reasonably expected to be potent enough to cause some anologous effect. The quality of this effect is determined by the quality of the cause, *i.e.*, ultimately the mind.

It must be remembered that it is not every man that possesses the distinction of an evil eye. In a village of two or three hundred people there are about half a dozen men and women who are marked as possessing evil eyes. If the character and antecedents of such persons are examined in detail to the very bottom springs of all their actions, want of enlightenment in the shape of an attribute that does not endure any kind of excellence in others, would be found to be one of the governing streams. But one who has an evil eye need not necessarily be a bad man for all practical purposes. But the theory is, that it is the mind that causes evil influences attributed to the eye, and it is therefore that all eyes have not earned this reputation. There is a nice distinction made in the nature of the effect produced by an evil eye on different objects. Certain eyes, the eyes of certain men are considered liable to affect only certain objects and that other objects are comparatively safe. This also points to the mental origin of the evil eye influences.

It is not men alone but certain animals also are believed to exercise the evil eye. The dog, the cow, the calf, the serpent are all believed to be potent enough to cause harm through a look. If the domestic dog sees the child eating its food, the child next day has no appetite. Similar effects believed to result from other animals. The magnetising power of serpents, tigers, &c., is now a generally acknowledged fact.

As for the effect of the evil eye. A strong granite pillar is said to be broken in two after it was seen by a specified person. Growing plants with fruits and flowers are said to have withered away soon after their being brought under the visual range of a certain evil eye. An instance is also cited of the evil eye or the evil tongue, in this case, affecting a fruit-bearing-tree. A jack tree producing very good fruits was owned by a farmer. This farmer had relatives in a distant village. There was a marriage feast in the house of the farmer's relative. In order to oblige him a few chosen fruits were despatched for the feast. The people assembled relished the fruit and a very commendatory after-dinner speech was made regarding the farmer's good luck in possessing such a tree producing so sweet and large fruits. The next year the farmer's jack tree produced

nothing but leaves and the tree itself withered away in the third year. This may be an extreme case, and one would rather inspect the geological surroundings of the tree for getting an explanation of the fact of the tree fading away. But such is the nature of the facts on which the current belief is based.

Men and animals are believed to be liable to such influences to even greater extent than vegetables and minerals.

Beautiful milch cows are most zealously guarded and kept under concealment in back yards. They are seldom let out along with the village cows and buffaloes that are collectively taken care of in the winter by the common cowherd-boy. The effect of the evil eye is perceivable when after a sally out into the village common, the cow returns with swollen udders that would not milk but only bleed, and the calf does not as usual jump in to suck. A professional is brought in and he, according to his immemorial procedure breaks some cocoanuts and performs some Poojah to the diety presiding over cattle (called Mundiyan in these parts) and the cow and calf are all right in a day or two. It is believed that similar (*mutatis mutandis*) results would happen to bulls, horses and elephants.

Men are supposed to be variously affected. Slight headache and fever, want of appetite and general weakness of a painful nature are believed to be the characteristic symptoms of a person affected by an evil eye. It is also believed that a train of complaints ending even in death might be caused by the evil eye.

The modes of evading it are many but they all are based on the principle of opposing one force by the same force in an opposite direction. Presuming that the wording 'evading,' is so used as to include both 'preventing' and 'curing,' these two aspects are considered separately.

Measures adopted for the prevention of evils arising from being brought under an evil eye's range of vision are of two classes, temporary and permanent. Pictures of ugly figures such as monkeys with human dress, &c., are put up in the front of newly-built houses to prevent the evil eye from exercising its bad influence on the article sought to be saved by diverting attention to such objects as are conspicuous for indecent or obscure aspects of human, animal or combined pictures. This belongs to the temporary class seeking to avoid the difficulty by rounding the hill instead of cutting through.

Those of the permanent class belong to the category of Amulets, Talismans, &c., &c.; Question No. 56, to be dealt with separately.

Measures adopted for curing any complaint brought on, as supposed by the evil eye are based upon the principle of mesmeric and will force.

Some crumbs of bread or a little water, or a cup of Ghee is taken to

the professional who mesmerises the same by means of a Darbha grass—conductor of mesmeric force—held in the hand on the one end, and touching the bread or water on the other, the operator in the meanwhile, concentrating his mind and will on the object to be secured by repeating a MANTRA whose meaning and force are found to be suited for the purpose to be gained.

So much has been said and written in modern times about the fact of the will force that no attempt need now be made to emphasise the acknowledged facts of an obvious nature.

That the intention is so, is proved by the further practice of not putting the mesmerised article on the earth and of not allowing the person who carries the medicated article from the professional to the patient, to speak to anybody, before the article is swallowed by the recipient.

These precautions apparently serve to keep up the stored up force in the dose, without being allowed to dissipate itself through the earth, or to be confounded with other sets of will vibrations that would necessarily be generated if the carrier is allowed to talk and think, as he pleases, in the way, keeping the article in his hand. This would, besides, go a little way to augment the already-charged energy by the additional thoughts and volitions of the carrier, who, not being allowed to talk in the interim, may be reasonably expected to have his thoughts concentrated on the thing he carries.

This is how one bad force is counteracted by another good force (in the same mental plane) that afterwards exhibits its results in due course in the physical and physiological words.

This seems to point to a rational explanation of this universal belief which is probably next to the belief in the existence of evil and good ghosts, in its general credibility.

Quotations from books relationg to the matter are avoided because such information as can be got at from recorded data are desired to be excluded from notes of this kind. *Vide* last sentence of para. 3 of letter, dated 4th August, 1898.

In popular phraseology the words used to designate the evil eye are also calculated to strengthen the view, now set forth, of the mental origin of the evil influence. The terms used in this local area mean an eye-shot, an eye-stroke—translated literally.

The theory has been very boldly set forth in Swami Vivekananda's Raja Yoga that nothing moves in this world that is not PRANIC in its origin, sweeping away the cautious exception of Sir Henry Maine, in the famous expression "Except the blind forces of nature, nothing moves in this world that is not Greek in its origin." This Pranic motion is capable of manifesting itself in unexpected quarters and in an unexpected manner.

Although as yet no instrument sensitive enough to indicate the subtle movements of this force has been invented, modern science would eventually arrive at the same goal from which the ancients started. That is, starting from the *à priori* they found out the leading laws regulating the cosmology of this universe, whereas starting from *à posteriori* the same point is being reached step by step and from generalisation to generalisation, both methods forming the counterparts of one and the same whole.

The theory of a dual consciousness has already been brought forward in good earnest by Mr. Frederick Meyors, Honorary Secretary of the Society for Psychical Research at the last meeting of the British Medical Association in Edinborough. The dual consciousness according to him consists (1) "of the ordinary consciousness of which we are cognizant, (2) a deeper, higher and more untrammelled consciousness-termed the sublimital strata of mind, which we know not in our normal conditions but which under certain circumstances, manifests itself more or less distinctly." These sublimital strata of mind may correspond with the unconscious mental modifications of Sir W. Hamilton. To theorise on the nature and contents of this yet unexplored,—unexplored by modern science, region would be bold dogmatism instead of calm demonstration.

It may be safely advanced, anyhow, at this stage of the development of science, that a force acting from one point in this unconscious plane upon another point in the same plane, connected in the lower plane with another human centre, may be expected to manifest itself more or less distinctly in the physiological or physical side. This is urged as a working hypothesis and may be tested in an innumerable number of instances before being acknowledged.

In the editorial relating to the question of Indian Folk Lore in the *Times of India* a hope was expressed that the notes that would be collected in response to the circular containing printed questions of Mr. W. Crooke, might contain some real explanation regarding the curious phenomena relating to the subject. An explanation that would satisfy all phenomena, if such there can be, can undoubtedly satisfy anyone of them.

VIII.—*On the Origin of the Chāklai Musalmāns.*—By Maulavi Abdul Wali.

[Received 17th March; Read 4th April, 1899.]

Of the several villages designated Chākla (چکلہ) and mentioned in the "Village Directory" (Vol. X, Jessore), one has given its name to a particular *class* of Musalmāns that now dwell in and around the village. The village Chākla, within the Police station of Munirāmpūr, District Jessore, is snugly situated on the left bank of the river Kapōtakṣa (Kabadak). A few miles north of Trimohini the river winds and turns in such a zigzag way that the Mauza Chākla is surrounded on its three sides—east, south and west—by the blue-watered river;[1] while on its north lies a *khāl* (inlet) called Jhāñpar-khāl, Here in this insular village as well as in the neighbouring ones; *viz.*, Diyāṛā, Manahārpūr, Khurd-Pakuṛiyā, Uludāñgā, Salimpūr, Dulāipur etc., inhabit a certain low class Muḥammadan families as a distinct tribe, who all originally belonged to the aforesaid Chākla.

The cause why they became alienated from their other fellow-Muslims was told me, some time ago, while I was waiting, at the Trimohini ghāt for the steamer that plies between Jhiñgargācha and Kapilāmuni.

Once upon a time, says the tradition, there lived a certain family of Muḥammadans in the above-mentioned village "Chākla." Their only offence—a serious offence, indeed, in the opinion of the Indians—was that they had sold fish which they had caught in their village *bāñdāl.* A channel of running water obstructed by constructing a *band* —often of bamboo—for catching fishes with traps or nets is called a bāñdāl. Whether these Chākla men sold the fish in the *bazār*, or to fishermen that were passing by their bāñdāl are matters not yet definitely settled, and are immaterial for the purpose of this paper. They on their part repudiate the assertion, and maintain that they were never guilty of such an offence. Their own version of the tradition is that their neighbours—with whom they were in enmity, and had party feelings—contrived to bring them into disgrace. A number of fishermen, who were secretly tutored by their enemies, on being questioned by the villagers whence they had got the fish, replied, "Oh, we bought them from such and such ones, who were catching fish, and sell them to us." Those men who—truly or falsely—were considered guilty of selling fish by the villagers, were at once excommunicated.

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1 Kapōt-pigeon, akṣa-eye, means "pigeon's eye" so called from its beautiful blue water.

From this time the other Musalmans do not eat or drink with them, nor do they smoke the same *huqqā* (or pipe). The excommunicated men—ever since called *Chāklai Musalmāns*, whether they live at Chākla or not—live thenceforth separately and exclusively. They marry among themselves, and are invited only in their own tribal *ziyafats* or feasts. This breach of the social law is as unusual, as the punishment inflicted on the unfortunate man is unduly severe. The punishment, however, is not sanctioned by Islamic Law.

A milkman (Gowālā) whom I asked as to the population of the community replied thus, "It requires forty (40) *mans of dahī* (curd), which is a *sine qua non* in Bengali feasts, to entertain the community as a whole. This quantity of *dahī* is required for 4,000 adult persons, but including the boys, the quantity suffices for 5,000 persons." They according to this novel—and I suppose, correct—method of census-taking are about five thousand men. As these feasts are partaken of by male members only, I would, therefore, estimate the population, both male and female, to be about *ten thousand* souls. The community is fast multiplying, is very compact, and shy of any undue interference from outside.

A Brahman lad told me that the Chākla Musalmāns were as robust as they were ruffianly, and would not allow other Musalmāns—whom they consider as their sworn enemies—to live peacefully with them. Their conduct towards other communities also was not amicable. But the picture is overdrawn, and I daresay, imaginary and may be true of his own village. These men are—as I have stated before—to be found in one locality only; *viz.*, at Chākla, and the neighbouring villages, on either banks of the river Kapōtakṣa, and nowhere else. The Musalmān fishermen are called *Nikāris*, or *Pazārs* as in some places.

IX.—*On the legendary Origin of the river Kūmrul and Bīl Kākulī, &c., in the District of Jessore*—By Maulavi Abdul Walī.

[Received 29th January; Read 1st March, 1899.]

This river and the lakelet with several of its offshoots are situated in Sub-Division Jhenidah, Zilā Jessōre. The following legends as to their origin are current, and narrated by the young and old of North Jessōre.

The Pōṛa Çīva.

It is said that once upon a time there was somewhere an image of the Hindu god Çiva, with a *pāras-patthar*, or philosopher's-stone, on its crown. A holy Sanyasī, in the course of his wanderings happened to come to the place where the idol had been established. The precious stone, a mere touch of which would convert iron into gold, was too tempting, even for the holy man, who at once conceived of a plan to rob the idol of the precious stone. The plan adopted was this. In the day time he used to gather cow-dungs and twigs, to which he would set fire at night, close to the temple of Çiva, and would cry on the top of his voice "O come and rescue me; the Sanyasī is burning me." People on hearing the cry ran towards the Çiva temple, and what they saw was that the Sanyasī was sitting by the side of the fire, adding fuel to the flame, and himself crying as such. The villagers came for a day or two on hearing the above cry of the wily hermit, but none did come after the lapse of a few days.

When the Sanyasī saw that none would turn up at the cry of alarm, one night he kindled a huge fire as usual, and having *confined the idol with a charm*, dragged it into the burning flame. The image then began crying like the Sanyasī, "O come and rescue me; the Sanyasī is burning me." But nobody came. Being quite helpless, Çiva (for the idol was no longer an inanimate being) implored the Sanyasī to desist from burning him; and asked him what he wanted of him. "I want the pāras-patthar" said the Sanyasi. "Nay, do ask something else" said the helpless god. The hermit persisted that nothing but the stone he wanted. At last Çiva was compelled to yield, but *cursed* the Sanyasī. The pāras-patthar became at once separated from the crown of Çiva, which the Sanyasī secured. Çiva being thus rescued, plunged into a *Bīl* hard by.

After a while the god appeared to a fisherman in a dream, and told him to take the image to his house, for it would be good for him.

This the fisherman did, and the image was thenceforth called *Pōṛa-Çiva*, or burnt-Çiva. According to another version, the fisherman, while fishing in the *Bīl*, found the burnt image, and took it home.

The Sanyasī.

The Sanyasī having thus got the precious stone, again set out on his wandering expedition, and arrived at Mauza Dīgnagar, a village close to the Harinakumda Outpost, Sub-Division Jhenidah. In that village there lived at that time a *Kumar* or potter named Dē-Pāla, to whose house the Sanyasī repaired, and became his guest. The potter was very pious and hospitable towards his guests. The hermit having rested a while, hung his *Jhōlā* (wallet) at the *pūiṣalā* (a house where the potters burn the earthen pots), went to have a bath at the Bāōṛ or lake. The wallet in which was the philosopher's stone was wet; and drops of water that fell from it upon a *spade* that was beneath transformed the latter into gold. Dē-pala at once saw what the wallet, from which the drops fell, contained. He searched the wallet, took the stone out, while the Sanyasī was still absent, and went into the secluded part of his house, where he found it after experiment to be the genuine *elixir*, or pāras-patthar. The Sanyasī was in the habit of washing it with water, after his daily bath, and drinking the water, and then making *puja*. Having returned from the customary bath and ablution, he searched his wallet; but to his horror he found that the stone was not in it. He then accused the potter that he must have taken it, but Dē-Pāla swore that he knew nothing of it. The Sanyasī became very much mortified, and asked the potter that if he would return the stone he would bless him, and that he would become a great and happy man. The potter, however, persisted that he had no knowledge of the stone. The Sanyasī to his great mortification said, "Dē-Pāla, you shall no doubt be a very wealthy man, but remember that at last your family shall become extinct."

Thus having cursed, with a curse on his own head, the unhappy Sanyasī proceeded on with his *Jhōlā*, and gave up his ghost close to a place called Singā, or Singā-Jangal; and everything that he had in his wallet fell scattered. So far the curse of Çiva was fulfilled. From every part of his unholy body as well as the things cast asunder gushed out *dahas*, or more properly lakelets as a consequence of the curse of Çiva.

The Bīl Kākulī and its offshoots.

The Sanyasī dropped down dead, north and south. His two *arms* and *head* are indicated by a *daha*, or lakelet, called Hatha-daha and

Matha-daha (Hatha=arm: Matha=head). The lakelet is also called Jōgi-daha in memory of the death of the Jōgi or Sanyasī.

His body and legs are also indicated by a part of the *daha*.

The two *Bīls*, called Baṛa-Kā̃kulī and Chota-Kā̃kulī (that is, big and small Kā̃kulīs) were formed on the spots where the two Kā̃kulīs or Combs—big and small—had fallen. Kā̃kulī or Kā̃kuī=a Comb).

At-la-daha is the name of that part of the *daha*, where the *Ātla* (a hollow mortar used for grinding *bhang* or Indian hemp) was thrown.

Chōta-daha is the name of that part of the *daha* where the stick of the Sanyasī had dropped, (chōta=a stick).

The khāl which touches the Hātha-daha and Māthā-daha, and joins with the Baṛa-Kā̃kulī is named either Chōta-daha or Hātha-khāl, being the spot identical with the left arm of the Sanyasī.

The entire space occupied by the above water-channel or rather lagoon measures about three miles by one-and-a-half. Viewed from a high place, the entire space looks somewhat like the body of a human-being;

Rāja Dē-Pāla, and the river Kūmrul.

The potter became in time very rich and a Rājā, and established his capital at Dignagar. The rent which he used to collect was—neither gold, silver or shell, but—old ploughs, spades, and things made of iron. These he transmuted into pure gold by the touch of the *pāras-patthar*, stolen from the wallet of the Sanyasī. After a while Rāja Dē-Pāla had a *Kumar* (crocodile) made of gold, and caused it to be placed into a tank, called *Sālphaliya*—the dried bed of which can still be seen. The golden crocodile was restored into life, and no sooner was an eye given to it, than it issued from the north-east of the tank, and proceeded onward. The spots traversed by the crocodile became a river, called *Kūmrul*—after the Kūmar (or crocodile). The Kumar in this way went as far as Sonargāoṇ, in the District of Dhākā (Dacca), where it was killed. The course of the channel, as traversed by this supernatural agent, is very zigzag and tortuous; the river is navigable in certain places, in the rainy season, and becomes dry, more or less, in other seasons of the year.

The river Kūmrul, as stated above, issues forth from the Sālphaliya tank, in Dīgnagar, and runs through Phalsī, Āṇḍōliyā, Tōlā, Narāyanpur, Arnyākāndi Sōhāgpur, Sriphaltalā, Dūdṣar and Biṣnupūr. Here, at the last-named place, the river takes the name of Kūmārhōr. On account of construction of roads and embankments, in places the traces of the river are almost lost. The river Kūmrul has so many *bends* because, so it is believed, the crocodile had but one eye.

The Carrier-pigeons and the death of the Rāja together with his family.

The Rāja enjoyed his ill-gotten wealth for a time, built houses, and constructed roads, and had had several children born to him. At last he, or according to another version, one of his descendants—Rāja Sālphaliya—was summoned by the reigning Nawab or Emperor. Being apprehensive of his life, as well as that of his family, the Rāja took a pair of *carrier-pigeons* with him. Before proceeding, he told the members of his household that if any evil befel him, he would let the pigeons off, so that as soon as they should see these pigeons they should conclude that he was condemned to death. But lest they themselves be dishonoured, they were told, that as soon as they saw the carrier-pigeons, to go on board a boat, and drown themselves in the Sālphaliya tank by locking the cabin of the boat, and letting the water in by making holes in its botton.

The Rāja was, however, honourably acquitted, and rode triumphantly towards his home at Dignagar. Being thirsty, he stopped at a place—some four miles south of his capital—to quench his thirst. The pigeons which were on his arms became restless at the sight of the water and got accidently released. The Rāja knowing full well the terrible consequence of this, rode off with a view to reach home before his family and children had taken the fatal step. But alas! he was too late. The boat had already gone down, only its topmast was visible. Dē-Pālā or Sālphaliya seeing that his life—without those who were nearest and dearest to him—was not worth living, himself plunged, with his horse, into the tank. Thus the curse of the Sanyasī—who too had been cursed by Çiva—was literally fulfilled. The place where the Rāja had stopped to drink from the water of the stream and see the *pairas* (or pigeons) let loose from his arms is from this time called Pairadahā (or Pigeon Abyss). Every year during Bārūni Gaṇgā bathing festival in the Bengali month of Chaitra (March—April) people go there to bathe in the stream.

Conclusion.

The story of the Rāja is variously related, but the main plot is the same as stated above. The tank of Sālphaliya is said by some to be the work of Rāja Sālphaliya—or more correctly Raja Sāli Mohan—who was the cast of the line founded by Dē-Pala. There is a *Jāṇgāl* or a very wide road—passing from Dignagar towards south—said to be constructed by Dē-Pāla, or Sālphaliya.

Some years ago, while digging earth, traces of a house with stone-pillars and roof were found out at Dignagar, believed to be the remains

of the palace of Raja Dē-Pālā. Several pieces of cloth were found in a part of the house; but when touched they became like dust. The stones are ornamented with pictures. I do not know if they have any inscriptions, not having seen them myself. It is also said—with how much truth I do not know—that at the village of Dē-Gāoṇ in the District of Birbhūm, there are or were four mud mounds, popularly called *sthupa* where treasure was buried by Raja Dē-Pālā. Dē-Gāoṇ is named after Dē-Pāla.

I believe, that there was a line of wealthy *Rajas*, whose palaces and houses existed at Dīgnagar; and perhaps, the hermit who was supposed to be the possessor of a precious stone was done to death for the same, and the *Daha* or lagoon is the spot where his body was thrown. But the story shows the undying belief of the natives of the East to the virtue of the Philosopher's-stone, which can turn inferior metals into gold; and that this hidden knowledge is possessed by Faqīrs, hermits and Sanyāsis—who do not live the worldly lives, and do not care for the riches of the world. It is also believed by the Indian public that persons who commit a very heinous or sacrilegious crime die an unusual and violent death. *Can it be that the Rāja—Dē-Pāla, or Dēv-Pāla—was not a potter, but a member of the great Pala kings of Bengal?* There can be very little doubt that Dīgnagar contained a very extensive palace of a potentate in by-gone times.

X.—*The tradition of the "Ṭiōr Rāja"*—*By* Maulavi Abdul Wali.

[Received 29th January; Read 1st March, 1899.]

As an illustration of the foregoing story and the wide-spread belief of the Eastern people with regard to—

(*a*) Philosopher's stone, and

(*b*) Carrier-pigeons

the following "Folk-tale" of *Ṭiōr Rāja* is of interest.

In the district of the 24-Parganas, sub-division Satkhira* (Sāt-Ghariya), police station Kalarōa (Kalara) there is a place where are still to be seen traces of a mud-built fort or rampart and entrenchment, and several large and small tanks, attributed to a Rāja of the *Ṭiōr* caste of fishermen.

Once upon a time while this *Ṭiōr* fisherman was plying his fishing-boat, a hermit or Sanyasī asked him to take him across the *bīl* (or a large sheet of water). The fisherman consented and while in the mid-stream *something* from within the holy man's *jhōla* or wallet came in contact with an iron instrument of the boat, and transmuted it at once into gold. The Ṭiōr fisherman thus found out that the wallet of the Sanyasī contained the pāras-patthar, which he snatched away from the hermit and threw him overboard into the channel (*bil*). While the holy man was being caste into the water, he *cursed* his murderer that he too would die the same death, with his family and children, and that his line would be extinct, and none would remain of his posterity. To die without children is the greatest calamity that a Hindu can conceive of.

The Ṭiōr became a great Rāja. The revenue, which he used to receive from his tenants, consisted of old ploughs, spades, scythes, and sickles, all of iron, which he used to convert into pure gold. He had a large family and built a fort and entrenchments, and excavated six times-twenty-and-six (=126) tanks.

The Rāja enjoyed his power for a short time when he was summoned by the Nawab to give account of his deeds. Lest he be killed for his faults and his family dishonoured he took a pair of carrier-pigeons (*piārās*). If he was honourably acquitted, so much the better, otherwise, he would let the pigeons fly—which, the family was told, would be the sure sign of his death, and their disgrace.

* Since a few years Satkhira forms a sub-division of the Khulna district.

The Rāja was honourably acquitted, but while riding home the pigeons flew from his arm. His family and children on seeing the pigeons rushed into a boat closing the cabin, and making a hole in the bottom drowned themselves. The Rāja who arrived soon after also drowned himself. The curse of the hermit was thus fulfilled. The tank in which they were drowned is called *Baṛa-pūkhar* (big-tank).

In the Survey-map the spot is marked as containing a *fort*. The village is called Nawapara Maṇighar, and also Gaṛhdāṇī (dāṇī or dāṇgā means an elevated place) ; *i.e.*, an elevated place containing a *gaṛh* or fort. The particular spot containing the fort is sometimes called "Dāṇā-Maṇighar," or "Dhan-potar Dāṇā," implying buried treasure. Until lately no two ploughmen could be seen ploughing together where the Ṭiōr-Rāja's fort is situated, lest there should be a quarrel, about the unearthed treasure which is sometimes found there.

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Notes on the Fauna of the Gilgit District.—By Capt. A. H. McMahon, F.Z.S., F.G.S., F.R.G.S., C.S.I., C.I.E.

[Recd. 20th Feb.; Read March 1st, 1899.]

By the term Gilgit I mean the country included within the geographical limits of the present Gilgit Political agency. It comprises besides Gilgit proper the states of Hunza, Nagar and Yasin; the Astor and tributary valleys; Chilas; and the Upper Indus valley with its tributary valleys from Haramosh as far south as Hodur. Briefly, I refer to the country bounded on the North by Wakhan and the Pamirs; on the East by the Mustagh range and Baltistan; on the South by the Burzil, Kamri and Bahusar Passes leading into Kashmir and Hazara; on the West by the Shandur Pass and the independent territory of Tanjir and Darel. Comprising as this tract does a mountainous country of lofty ranges with several peaks over 25,000 feet and countless others between 20,000 and 25,000 feet in height, it may justly lay claim to being one of the most lofty tracts of country on the surface of our globe.

Any information therefore which we may obtain and collect regarding the fauna of this country cannot fail to be of interest to the zoological world. It is on this account that I venture to place on record the results of such observations as I have been able to make during my stay (in 1897-98) in the Gilgit Agency. Such as they are they may help to corroborate the results of the zoological researches of Biddulph, Scully, and Alcock in portions of the same tract, and perhaps in a few instances also to add to them.

With but few exceptions the fauna of the country may be termed nomadic. The reptiles, and a few mammals only such as the marmots, the rats, the hamsters and voles can be said to have any permanent residence throughout the year. Even the rat leaves his summer country house in the fields for his winter one in the shelter of the roofs and walls of houses on the approach of the cold season. The other mammals are purely nomadic. As the heat in the lower valleys increases they betake themselves higher and higher into the upper valleys, either following the lower fringe of snow line, as in the case of markhor, (*Capra falconeri*), Shapu (*Ovis vignei*), hares, lynxes, wolves, foxes, wild dogs, bears and martens; or keeping above the snow line nearly all the year round as in the case of ibex (*Capra Sibirica*) and snow leopards. The fishes too range widely throughout the year, ascending in the summer to the very feet of the glaciers and retreating in the winter down to the warmer waters of the Indus Valley.

The birds, as in most other countries, travel widely; the majority are only winter visitors; some pause merely for a short rest on their journeys to and from India from Central Asia and other northern climes; others stay the whole winter. Even those which one might perhaps call permanent Gilgit residents, such as the Lämmergeier (*Gypaetus barbatus*) and certain eagles and hawks, abandon the lower valleys and resort to the upper ones for the summer.

One cannot fail to be struck by the absence of animal life in the lower valleys in the summer. The carcases of animals which in most other countries, summer or winter, would soon be picked clean by beasts and birds, lie untouched throughout the entire summer. With the first approach of cold, down come the wolves, foxes, dogs, vultures and all the world of nature's scavengers, and the carcase which has lain so long untouched disappears as if by magic; even the bare bones disappear, carried off by the majestic Lämmergeier, which swoops down on them the moment the more vulgar crowd have left them. Unlike the summer, no sooner does a beast die or fall a victim to the sportman's bullet in the winter than down come the vultures on to it, and if of small size it may be carried off before his very eyes before the sportsmen can get up to it. Many a dispute one sees between the first arrivals. I once saw a lordly Griffon Vulture (*Gyps himalayanus*) alight on the carcase of a cow, followed by some crows, the common Jungle Crow (*Corvus macrorhynchus*). One would have thought the meal sufficient for all, but the crows evidently did not think so, for they at once set upon the luckless vulture and turned him out. It only took three crows to eject him, and not content with removing him, they followed him in the air taking pecks at him from behind to accelerate his move-

ments. Two returned, but the third remained in attendance, and whenever the Griffon showed signs of turning the crow renewed his attacks, and this went on until the strange couple were lost to sight.

Mammalia.

Regarding mammals I can give little information not already collected by former observers; I can however add to the fauna already recorded two more animals hitherto unknown to be in the Gilgit District, *i.e.* (1) the Bharal (*Ovis nahura*). I first heard of a pair of horns being picked up on the Mintaka Pass leading into the Pamirs. Subsequently I obtained two more horns and one good specimen of the entire animal. They are to be found in small numbers only in Gujhal (the upper Hunza valley) near Passu. I am told they are in large numbers in Raskam on the north of the Mustagh range. (2) The ermine (*Putorius Erminea*) not hitherto reported within the Gilgit district. I obtained specimens which came from the forest regions in the upper valleys of Chilas.

While in the Hunza and Nagar countries I was much struck with the large numbers of the Beech Marten (*Mustela foina*) which descend in winter into the Hunza Nagar valley, to altitudes of 6,000 ft. or so and take up their abode in the walls of the villages and houses. I found that a small reward would obtain me any quantity in these villages, and in fact I soon had to prohibit any more being brought to me.

Before leaving the mammals, I would invite the attention of zoologists to the question whether the Tibet Marmot (*Arctomys himalayanus*), the smaller Himalayan Marmot (*Arctomys hodgsoni*), and Longtailed Marmot (*Arctomys caudatus*) are not all one and the same species, the tail differing in length according to age. I cannot help thinking that they are one species. I have just sent home to the Zoological Society of London a live specimen of a young Marmot caught in the Burzil Pass, the habitat of the *Arctomys caudatus*. At present by tail measurement he is an *Arctomys himalayanus*; I fully expect he will grow into an *Arctomys caudatus*, or failing that by reason of confinement, remain at the intermediate stage of *Arctomys hodgsoni*.

Reptilia and Batrachia.

These are represented by but few kinds in this country. Those that exist there have to put up with a long period of hibernation amounting in the case of some to about eight months out of the twelve.

The Himalayan Viper (*Halys himalayanus*) is very common in wooded tracts. I was struck with the number of cobras (*Naia tripu-*

dians) which exist in Gilgit itself and the Indus Valley. I obtained many specimens and heard of others. These are all of the black variety. I have never heard however of any one ever having been bitten by cobras in the Gilgit District.

From what I could hear the *Echis carinata* is common in the Indus Valley in the neighbourhood of Chilas, but I never obtained a specimen.

The following lizards abound in the lower portion of the Astor and in the Indus Valleys, but are only to be seen in the summer months. (1) *Agama tuberculata*—noticeable for its deep jet black colouring on the head and back. (2) *Agama himalayana.* This in life has a pretty pale pink colouring over the throat.

The little *Mabuia* is very common in the upper Astor and other neighbouring valleys. I noticed no other lizards in the district.

Birds.

The winter visitors are very numerous, and as mentioned before the majority merely pass through the country on their way to and from India; others remain throughout the winter. I have naturally been unable to make anything that would in the least approach to being an exhaustive list of the birds to be found in the district. I will content myself with giving, with a few remarks when necessary, a list of those birds only of which I have brought specimens for the Indian Museum.

Gypaetus barbatus. Very common in the winter.

Gyps himalayensis.

Hieraetus fasciatus. Differs slightly from type by having 3rd quill slightly the longest.

Buteo ferox.

Circus aeruginosus.

Buteo desertorum. This has been seen to catch uninjured mallard; one also seized and carried off a woodcock which had been shot.

Circus cyaneus.

Falco barbarus. I only obtained two specimens, and I do not think they are common in the Gilgit district. One of the above was shot after seizing a pigeon and biting off its head in mid air.

Accipiter nisus.

Falco subbuteo. One specimen was caught by the hand sitting in a bush.

Tinnunculus alaudarius. Very common.

Gecinus squamatus. Very numerous. On one occasion when out hare shooting through low scrub, I put up large numbers. They seem to feed in the patches of highish grass growing at the foot of small trees, and their habits in this particular seem greatly to resemble the woodcock's.

Erismatura leucocephala.

Merganser castor.

Aegialitis dubia.

Porzana parva.

Corvus macrorhynchus. Very common.

Corvus cornix. Fairly common.

Graculus eremita. This and the yellow-billed chough (*Pyrrhocorax alpinus*), are very common.

Pica rustica. Very common; to be seen in large flocks everywhere in the district.

Merula maxima. This specimen appears to agree closely with the so-called species *Merula maxima*, but the Indian Museum specimens show so much gradation between this and the European variety *M. merula* that there would seem good grounds for supposing both to be one and the same species, especially as exactly the same difference in size exists between the European and Himalayan varieties of Missel Thrush. (*Turdus viscivorus*).

Trochalopterum lineatum. Very common.

Chimarrhornis leucocephalus. Generally seen making short flights from boulder to boulder in the beds of mountain streams. It constantly moves its tail vertically upwards in sharp jerks, but does so somewhat slower than a water-wagtail.

Ruticilla erythrogaster.

Carduelis caniceps. Very common in winter.

Tichodroma muraria.

Galerita cristata. Very common.

Emberiza stracheyi.

Among rare visitors I should note that two specimens of the Mute swan (*Cygnus olor*) were obtained in the winter of 1897 at Chilas.

I am much indebted to Major A. Alcock, I.M.S. and Mr. F. Finn, of the Indian Museum for the kind assistance given me in verifying and correcting the classification of my specimens.

Note on Hume's Bush-quail (Microperdix manipurensis).—*By* Captain H. S. Wood, I.M.S. *Communicated by the Natural History Secretary.*

[Received May 26th; Read June 7th, 1899.]

During my seven years of residence in Manipur I must have shot over 80 birds of this species there. It is by no means such a rare bird as Hume thinks. For my part I thought it was one of the ordinary quails until I saw a description of the bird in Mr. Oates' last book, and I sent a skin to the Indian Museum. I also gave Mr. Turner of Cooper's Hill a few specimens which he had stuffed by a trained taxidermist. I was surprised to find that there were so few specimens in the Museums and regret that I did not keep the skins of a few more. The Manipuri name for the bird is *Lanz-Soibol*, literally, the Trap Quail, as the Nagas snare this bird in nooses after the jungle fires. These birds breed in Manipur; the egg as in all the quail tribe is very large in proportion to the size of the bird, and is of a greenish colour blotched with patches of brown and black. The nest is merely a hole scraped in the ground and there is no particular nest formation. The eggs in my possession unfortunately got broken in transit or else they would have been valuable. I have only seen these birds at certain times of the year, during the rains and before the jungle fires. They keep to very dense jungle composed entirely of sun and elephant grass, and as they are great runners they are very hard to see. It is only after the jungle fires from February to April that one sees these birds in any quantity. They are always in coveys varying in number from 6 to 8. They are great runners and at first look like black rats running along the ground and are hard to see in the burnt grass the colour of which they so resemble. They will rise readily to dogs and after a short flight drop again into any patch of unburnt grass. I found them in greatest abundance in jungles adjoining nullahs in which there was a certain amount of water,—in fact they are always found close to water. Their call is a low whistle, soft in character, and this is heard chiefly in the evening after one has been firing the jungle, apparently a call for the assembly. This is a very handsome quail when closely examined, the breast markings being particularly handsome. I have never seen these birds in the low Hills. They are associates of the common francolin and where one is found the other is also in the locality. When running they keep very close to each other; in this way I have bagged as many as four in a single shot. Hume's description as to details of colouring is so accurate that I have nothing to add.

Natural History Notes from the Royal Indian Marine Survey Ship 'Investigator,' Commander T. H. Heming, R. N., commanding.— Series III. No. 3. *On some Notable New and Rare Species of Crustacea. By* A. Alcock, M.B., C.M.Z.S., *Superintendent of the Indian Museum.*

(Plate I.)

[Received July 28th; Read August 2nd, 1899.]

Contents :—

§ 1. On a new Hermit-crab exhibiting perfect commensalism with a Sea-anemone.
§ 2. On a new species of Crab of the genus *Domecia*.
§ 3. On a new species of *Latreillia*, and on the occurrence of *Latreillopsis* in the Andaman Sea.

Among the collections recently sent to the Indian Museum by Captain A. R. Anderson, I. M. S., lately Surgeon-Naturalist to the Marine Survey, are a large number of specimens of a new form of Hermit-crab, a single specimen of a new species of the curious little Coral-crab *Domecia*, a new species of *Latreillia*, and specimens of *Latreillopsis bispinosa*.

§ 1. *On a new Hermit-crab exhibiting adaptive commensalism with a Sea-anemone.*

The Hermit-crab is noteworthy (1) in having for its refuge, not the usual mollusk-shell, but a sheet or blanket formed by the coenosarc of a colony of Sea-anemones, (2) in being—as far as the male is concerned—symmetrical, and (3) in having the appendages of the 3rd–5th somites of the male and of the 2nd–5th segments of the female present on the right *or* left side indifferently.

Symmetry in Hermit-crabs is, of course, nothing new: *Pomatocheles* is perfectly symmetrical, as also are *Chiroplatæa* and *Pylocheles* (if these two genera are really distinct from *Pomatocheles*): also symmetrical are *Glaucothoe*, *Mixtopagurus*, *Xylopagurus*, the male of *Gryllopagurus*, some species of *Cancellus*, and lastly, though in a different way, *Ostraconotus*, *Tylaspis*, and *Porcellanopagurus*.

[In our new form the male is symmetrical somewhat in the same way as in the three genera last named; that is to say, the abdomen is a soft bag without any *lateral* twist.]

Nor is there anything unusual in the fact that the protective covering of the abdomen is not a mollusk shell; for in these seas alone there are several well-known instances of Hermit-crabs making use of other convenient receptacles. For instance, *Pylocheles Miersi* is found impacted in hollow twigs of sunken drift wood; *Troglopagurus*, according to Messrs. Thurston and Henderson, lives in small cavities

in coral; and I have myself seen a large *Coenobita*, on the island of Minnikoy, holding the empty shell of a small coco-nut over its abdomen. Again, in other parts of the world, *Gryllopagurus* lives in burrows of its own construction; *Pylocheles Agassizii* was found concealed in a cavity in a piece of sandstone, and another specimen was taken from the gastral chamber of a siliceous sponge; *Xylopagurus rectus*, like our *Pylocheles Miersi*, was discovered in a lodging in drift wood; *Ostraconotus* and *Tylaspis* are both believed to have some special protective shield, other than a shell: and *Porcellanopagurus* lives free among sea-weed.

Again, the association of our new form of Hermit-crab with a sea-anemone is nothing strange: indeed, commensalism between crustacea and sea-anemones is one of the most familiar facts of zoology, and a large number of instances of it have been described. In most cases, however, the facts seem to be that an individual of a definite species of crab and an individual of a definite species of sea-anemone have both at once taken possession of the same mollusk-shell, which they continue to inhabit for their mutual advantage,—the crab acting as locomotive to the sea-anemone, and the sea-anemone in return acting as a defence and warning-post, and possibly also as a decoy, for the benefit of the crab.

But though the mutual advantage of the association is plain enough, the absolute and essential necessity of it is not so plainly seen, and it is reasonable to imagine that when in the course of growth the Hermit-crab has to seek a new and larger shell, the partnership with the sea-anemone can be dissolved by simple withdrawal, without dangerously affecting the life of either individual—at any rate until such time as each can find a new partner of suitable size. In other words, there is no adaptation of either animal to the other, and each seems capable of existing apart from the other.

In the present case there is no shell to act as introduction to and bond between the two animals; and the sea-anemone, which is a colonial form with a spreading coenosarc, merely forms a sheet, which the crab simply tucks under its telson by one end and pulls over its back by the other end—the polyps seeming to have no power of adhesion and to depend on the crab for a fast hold.

The nearest approach to this state of affairs is found in *Parapagurus pilosimanus*, which, when full-grown, lives in a cavity hollowed out of the coenosarc of a colony of a large species of *Epizoanthus*. But in this case the individual hermit-crab and sea-anemone start their partnership with an empty mollusk-shell, which in course of time, as the occupants increase in size, becomes absorbed, so that, at last, the crab is entirely dependent on the polyp-colony for the protection of its soft abdomen.

But even here, though the association seems to have become much more intimate and permanent, there seems to be no essential adaptation of either animal to the other, nor does it appear to be beyond the bounds of possibility that each might exist—though its existence might not be so complete and secure—apart from the other.

In the case of the new form of Hermit-crab, now to be described, there is no evidence of the intervention of a shell, or other adventitious support, at any stage. Captain Anderson dredged 205 specimens, of both sexes and all ages, and in every observable instance the parent polyp of the protective colony appears to have settled on the hinder end of the abdomen of the crab and to have gradually spread by budding as the latter increased in size; so that the intimate and immediate connexion between the two animals appears to be, from the first, a necessary one.

In other words, the peculiar interest of the case is that the two animals seem to have become directly adapted to one another, and to be incapable of a separate and independent existence.

For the Hermit-crab I propose the generic name *Chlænopagurus*, from χλαῖνα a large square mantle worn over the chiton, in Homeric times, as a defence against the weather. According to Liddell and Scott the chlæna was of a purple colour, which also corresponds with the colour of the polyps that form the Hermit-crab's mantle.

For the polyps I am not at present in a position to propose a name. They belong to the family *Zoanthidæ*, but not, as far as I can make out, to any known genus. The colony consists of a copious lamellar coenosarc in which the polyps, which are small and have not very numerous tentacles, are deeply embedded: the coenosarc is perfectly soft, fleshy, and flexible, without any incrustation or deposit.

Chlaenopagurus, *gen. nov.*

Carapace membranous, except in the cardiac region and the region enclosed by the cervical groove, which are perfectly calcified. Rostrum prominent.

Abdomen a soft membranous obscurely-segmented bag; symmetrical in the male, although the appendages of the 3rd, 4th and 5th somites are developed on one side only; asymmetrical in the female, owing to the presence, on one side, of a large fleshy leaf-like appendage that forms a brood-pouch.

Telson and the appendages on either side of it quite symmetrical.

Eye-stalks stout, of good length: eyes large, reniform: ophthalmic scales acute.

Antennules of moderate length. Antennal acicle long and slender antennal flagellum long.

Mandibles with a two-jointed palp. Exopodite of first maxillæ with a small curved non-segmented flagellum. External maxillipeds of the usual pediform shape.

Chelipeds equal; massive in both sexes, but more so in the male.

Legs stout, compressed: the first two pairs are about as long as or a little longer than the chelipeds, and end in long stout dactyli: the last two pairs are reduced in length and are chelate, the chelæ of the penultimate pair being particularly perfect.

In the male the first two pairs of abdominal appendages are present and are quite symmetrical: they are uniramous appendages modified for purposes of reproduction. The appendages of the next three somites (3rd–5th) are present on one side only—right *or* left: hey are minute, or rudimentary and, uniramous.

In the female the appendages of the first abdominal somite form a small symmetrical uniramous pair. Those of the next four somites (2nd–5th) are present on one side only—right *or* left: the first three of them are slender biramous appendages, of good size, for carrying the eggs, and are contained within a capacious cup-like brood-pouch formed by a membranous lobe that springs from one side of the fifth somite: the fourth of them is a tiny biramous appendage and is not enclosed in the brood-pouch.

In both sexes the appendages of the sixth somite are symmetrical biramous swimmerets, placed symmetrically on either side of the telson: their rami are slender and falciform.

The branchial formula is as follows:—

Somites and their appendages.	Podobranchiæ.	Arthrobranchiæ.		Pleurobranchiæ.	Total.
		Anterior.	Posterior.		
IX. ...	1r.	1	1	0	= 2+1r.
X. ...	0	1	1	0	= 2
XI. ...	0	1	1	1	= 3
XII. ...	0	1	1	1	= 3
XIII. ...	0	1	1	1	= 3
XIV. ...	0	0	0	0	= 0
	1r.	5	5	3	13+1r.

[*N.B.*—The rudimentary podobranch (?) of the external maxillipeds is a small lobe of the anterior arthrobranch of the same appendages]

Each gill consists of two series of broad leaflets. The leaflets, however, are not quite simple, since each one carries, near the tip, a pair of slender filaments large enough to be seen with the naked eye.

The single species known does not inhabit a shell, but lives

under a blanket formed by the perfectly soft coenosarc of a colony of Actiniarian polyps of a genus near *Zoanthus* or, more probably, *Mamillifera*.

Chlaenopagurus Andersoni, n. sp. (Plate I.)

The cervical groove is deep-cut, and the portion of the carapace that is included within it is strongly calcified. The triangular cardiac region is also fairly well calcified, especially in its anterior part. But all the rest of the carapace, except here and there along the outer edge of the cervical groove, is quite soft and membranous. The hepatic region is marked off from the branchial region by a transverse furrow, and a longitudinal furrow separates the hepatic from the pterygostomian region.

The front, which is carinated dorsally and deflexed at tip, projects well between the eye-stalks.

The eyes are large and reniform and are borne on stout stalks, which are about quarter the length of the carapace measured in the middle line.

The first two joints of the antennulary peduncle are together slightly longer than the eyestalk, the first joint being flattened and somewhat dilated dorsally: the third joint and the flagellum combined are not half again as long as the first two joints.

The antennal peduncle is about the same length as that of the antennules: the acicle is about as long as the eye-stalk: the flagellum is about twice the length of the carapace.

The chelipeds are massive, quite equal, and about as long as the entire body with the abdomen in the natural position: not much more than a third of their length is formed by the arm. They are more or less covered with long, stiff, golden yellow bristles, which are specially thick-set on the under surface of the arm and the outer surface of the wrist and hand: these bristles do not hide the rather coarse squamiform turbercles from which they spring. There are some coarsish spines along the inner border of the ischium, both the lower borders of the arm, and on a good part of the outer surface of the wrist and hand.

The legs are stout and compressed, and their borders—and in the case of the last three joints of the first two pairs, a considerable part of the surface also—are more or less covered with the same stiff yellow bristles that grow on the chelipeds. The first pair of legs are of equal length with the chelipeds. The second pair are a little longer, and a third of their length is formed by the long sabre-shaped dactylus. The third pair do not reach to the far end of the carpus of the second

pair: they terminate in a very perfect chela of comparatively large size, with the dactylus anterior (or dorsal). The fourth pair reach just beyond the far end of the merus of the third pair: they end in a very much smaller and less perfect chela, with the dactylus posterior (or ventral).

The abdomen is a perfectly soft membranous bag, of which the segmentation is quite recognizably, but far from conspicuously, defined. In the male it is symmetrical, though the minute or rudimentary appendages, that are present on one side (right *or* left) of the 3rd 4th and 5th segments, are represented on the other side only by small tufts of small bristles. In the female its symmetry is lost by the presence, on one side or other, of a large membranous leaf-like lobe that forms a capacious cup-like brood-pouch.

The first two pairs of abdominal appendages of the male end in convoluted plates, the second pair working in the grooves formed by the first pair.

The telson is quite symmetrical, and lies in the middle line, tucked up against the ventral surface of the abdomen. On either side of it are the quite symmetrical swimmerets of the sixth pair: the basipodite of these has a spine at its posterior angle: both the exopodite and endopodite are narrow slender and falciform, with the anterior edge serrated and the tip spiniform: the exopodite is many times larger than the endopodite.

The animal does not inhabit a shell, but is protected by the soft fleshy coenosarc of a colony of Actiniarian polyps. This forms a sort of sheet or blanket, one end of which is tucked round the telson of the crab and is firmly held by the hook-like swimmerets of the 6th abdominal somite and by the folded-in telson, while the corners of the other end are firmly grasped by the chelæ of the penultimate thoracic appendages in such a way that the sheet can be drawn right over the back of the crab as far as the eyes.

The colour of the crab is red: the coenosarc of the polyp-colony is bluish, the polyps themselves are dark purple.

A large male, lying in the natural position with the telson bent under, measures, from the tip of the rostrum, 63 millim.; and the chelipeds of the same individual, measured along their convex curve, are 68 millim. in length.

An egg-laden female measured in the same way, is 37 millim. long and has chelipeds 35 millim. long.

205 specimens, representing both sexes in all stages, were dredged by the Investigator off Cape Comorin, in 102 fathoms.

I have much pleasure in dedicating this species to Captain A. R. S.

Anderson, I. M. S., who was Surgeon-Naturalist on the "Investigator" from 1893 to 1899, and who discovered the species and first noticed the peculiar nature of its protective covering.

It will be figured in full detail in the *Illustrations of the Zoology of the Investigator.*

§ 2. *On a new species of Crab of the genus* Domecia *of the sub-family* Eriphiinæ, *of the family* Xanthidæ.

So far as I know, the genus *Domecia* has hitherto been represented in collections by a single species, *D. hispida* Eydoux and Souleyet, which was first discovered off the Sandwich Islands and has since been found to have a very remarkable distribution in shallow water, having been taken on the reefs of the Gulf of Mexico and Caribbean Sea, in the Andaman Sea, and in several parts of the tropical Indo-Pacific, from Java and the Liu Kiu Islands on the west to Tahiti on the east.

In my *Materials for a Carcinological Fauna of India*, pt. 3, p. 465 (Journ. As. Soc. Bengal, Vol. LXVIII. pt. 2, 1898, p. 230) four specimens of *Domecia hispida* are recorded from the Andaman Islands (Little Andaman and the Coco islets), and I have now to record the recent capture, again by the "Investigator," of three more very fine specimens from the same locality, as well as of an entirely new species of the same genus.

This new species differs from its sole congener *D. hispida* in the following characters :—

(1) the carapace, chelipeds, and legs are much less hairy and spiny :

(2) the orbital margin is smooth or only finely and obscurely crenulate :

(3) the exposed surface of the curious merus of the external maxillipeds is perfectly smooth :

(4) the coloration is different :

(5) the size is considerably less.

Domecia glabra, n. sp.

Carapace about three-quarters as long as broad, contracted posteriorly, flat, with no trace of regions and with only four distinct spines on its surface,—namely two, one behind the other, on either branchial region, near the antero-lateral border. [There is also a row of tiny spinules, visible only with a strong lens, immediately behind the frontal margin]. The surface of the carapace is free from hairs.

Frontal margin sinuous, denticulate and spinate: orbital margin smooth, or finely and faintly puckered: antero-lateral borders armed with four spines (including the outer orbital angle) of which the last but one has a tiny secondary spinule at its base. Two spines, side by side, at the inner suborbital angle.

External maxillipeds shaped like those of *D. hispida*, the merus being a very short broad joint, but having a perfectly smooth surface. Anterior edge of buccal cavern smooth.

Chelipeds, in the female, equal, hardly longer than the carapace: a spine at the far end of the inner (anterior) border of the arm, and some spinules at the far end of the outer (posterior) surface: upper surface of wrist, hand, and base of dactylus spiny.

Legs stout, not much shorter than the chelipeds: the anterior (dorsal) border of their merus, carpus, and propodite, and the posterior border of their dactylus, finely serrated: there are a few fine stiff hairs between the serrations.

Colours, orange or yellow; most of the spines of the carapace, but not of the appendages, are black.

A single egg-laden female from the Andamans, 16 fathoms: its carapace is only 4 millim. long.

The species has been figured for a future issue of the *Illustrations of the Zoology of the Investigator*.

§ 3. *On a new species of* Latreillia *and on* Latreillopsis bispinosa.

A new species of *Latreillia* was dredged in the Gulf of Martaban, in 53 and 67 fathoms. Its nearest relative is the Atlantic and Mediterranean *L. elegans*, which it resembles in form and colouration but from which it differs in the structure of the last pair of legs. These have a long propodite plumed exactly like the vane of a feather, and a very short dactylus. The species, which has been named *L. pennifera*, will be described in the forthcoming fifth part of my *Materials for a Carcinological Fauna of India*, and will be figured in a future issue of the *Illustrations of the Zoology of the Investigator*.

Latreillopsis bispinosa, described and figured by Dr. Henderson in the Report on the "Challenger" Anomura, has hitherto been known by a single imperfect female specimen, which was dredged off Zebu in the Philippine Islands.

Dr. Anderson has lately sent 3 specimens, namely, an adult male and female and a young male, which were dredged off the east coast of the Andamans at a depth of 53 fathoms (not the Gulf of Martaban, 53

fathoms' station). The male differs from the female in the form of the chelipeds, which in the male have a club-shaped palm. The branchial formula is exactly the same as that of *Latreillia pennifera*: there are 8 branchiæ on either side, namely 3 pleurobranchiæ (somites xi. xii. and xiii.), 2 pairs of arthrobranchiæ (appendages ix. and x.), and a small podobranchia on the second maxillipeds.

On a new species of Bhimraj (Dissemurus), *with some observations on the so-called family* Dicruridæ.—*By* F. Finn, B.A., F.Z.S., *Deputy Superintendent of the Indian Museum.*

(Plate II.)

[Received July 28th; Read August 2nd, 1899].

About three years ago I saw at the establishment of Mr. W. Rutledge, of Entally, a living specimen of a Bhimraj or Racket-tailed Drongo, which at once attracted my attention by its pied plumage, and I purchased it for the Museum. Unfortunately the bird did not long survive, being in poor condition when received, and its skin was transferred to the Museum collection. At the time I regarded it merely as a curious variety, but, taking into consideration the extreme rarity of symmetrical albinism (except in the case of albinoid or pallid varieties), and the fact that the appearance of this specimen is not suggestive of ordinary albinism, but rather of specific difference, I venture to characterize it as new, and shall name it after Major Alcock, I.M.S., Superintendent of the Indian Museum, in recognition of the kind encouragement he has always extended to my ornithological studies.

Dissemurus alcocki, sp. nov. (Plate II).

Habit and size of an ordinary example of *Dissemurus paradiseus* with a moderate crest; colour also as in that species; black glossed with steel-blue, with the following exceptions: the upper and lower wing-coverts except the primary-coverts, inner scapulars, axillaries, upper tail-coverts and the lower plumage from the breast downwards, which are white edged with black, and the rump and under tail-coverts, which are entirely white. There are also some white streaks on the lower breast, and a shading of white on the inner webs of the tail-feathers and innermost secondaries, and on the outer webs of the outer secondaries. The black edging of the white feathers is best developed on the greater wing-coverts, where it extends right round the tip of the feather. Soft parts as in *D. paradiseus* of the same age. Bill from gape $1\frac{1}{2}$ inches; wing 6; shank 1·1.

The tail is unfortunately broken, so that its length, and that of the whole bird, is not worth giving. The resemblance of this individual in all essential structural characters to the ordinary Bhimraj is, however, so great, that I do not doubt that the tail will prove to have a similar form with long racket-tipped outermost feathers.

The bird was a young hand-reared one, like all Bhimrajs I have seen for sale. Whether it would have lost any of the white on its first moult is of course doubtful, but *D. paradiseus*, unlike many other Drongos, is not much marked with white below in its youth, so that it is quite possible that the white lower parts are permanent in this form.

Mr. Rutledge tells me that he has had three similar specimens to that described, and that they all came from Segowli in the Gorakhpur district. The natives, he says, consider the form distinct, and call it the "King Bhimraj." Even should it, however, prove to be only a very marked aberration or sport, like the black-winged Pea-fowl (*Pavo nigripennis*) or the Ringed Guillemot (*Uria ringvia*), it is well worthy of note and of the attention of ornithologists, to say nothing of its remarkable beauty of marking, which should recommend it to fanciers, with whom in India the common Bhimraj is so popular.*

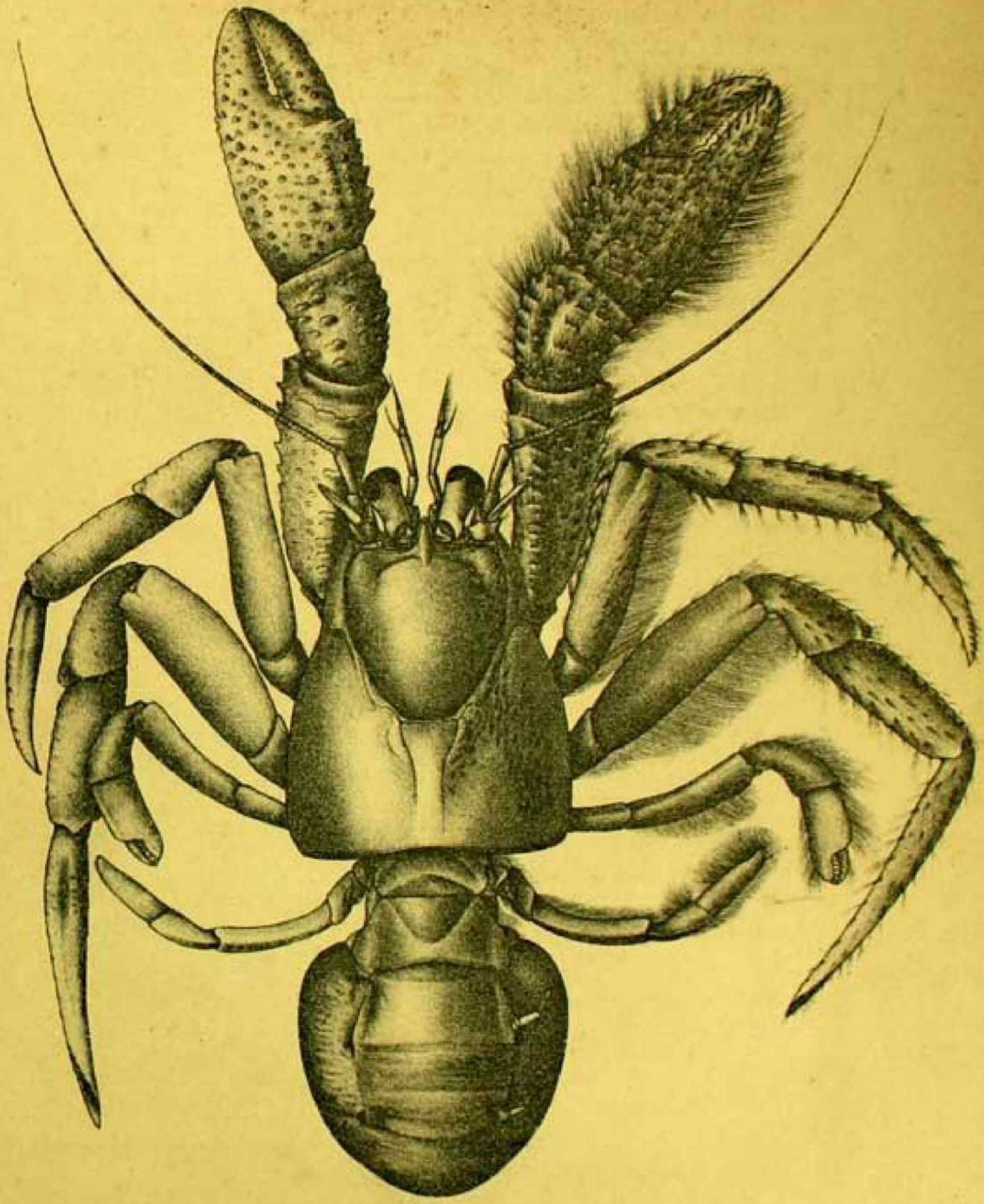
I take this opportunity of raising the question as to whether the so-called family *Dicruridæ* deserves its rank, and ought not rather to be retained in the *Laniidæ*, as Mr. Oates has very rightly, in my opinion, done with the Swallow-shrikes "*Artamidæ*" and Cuckoo-shrikes "*Campephagidæ*." That gentleman says, it is true, in the "Fauna of British India" (Birds, Vol I., p. 308), that the Drongos "form one of the best-defined families of the Passeres, their generally black plumage and forked tail of ten feathers sufficing to distinguish them readily." This

* This popularity is well deserved, for the Bhimraj is probably the most accomplished mimic known. Its powers in this respect have been alluded to by Jerdon (Birds of India, Vol. I, p. 49) and I myself have heard a very fine specimen once in Mr. Rutledge's possession imitate the mewing of a cat and the song of a canary to perfection. Mr. R. D. Oldham, of the Geological Survey, told me of one which he heard *talk* with a perfectly human voice; and the bird used by myself in bionomical experiments (see J. A. S. B., 1897), after a sojourn of a year or two at the Zoo learnt to imitate, in addition to other sounds, the babbling of a Cockatoo, in which one word at least "Baba" was quite distinctly audible. When I kept several together, before I began experimenting, they displayed a marked partiality for the leaves of *Bougainvillea*, and as the identical bird alluded to above, which was one of them, ate plantain readily, I am inclined to think that the corvine bill of this form is connected with a corvine omnivorousness of habits. The Bhimraj is also very affectionate and fond of notice, and, were if not that it needs (though too generally it does not get it) a very large cage and a good supply of living food, would make an ideal cage-bird.

is quite true, but I submit that all these characters taken together are not of family value even for Passeres. Colour of plumage cannot be allowed to go for much, and besides, we have the blue-grey *Dicrurus leucogenys*—showing one of the most characteristic of the Laniine hues. A forked tail recurs among the Cuckoo-shrikes in *Campochæra* and *Pteropodocys*, and the number of feathers in it cannot be considered of much import, when we allow the Thrushes of the genus *Oreocincla* to have twelve or fourteen, and yet remain together.

An anatomical distinction, which Mr. Oates has not noticed, is that the *Dicruridæ*, alone among Passeres, lack the accessory semitendinosus muscle, as recorded by Garrod. But I fail to see that an isolated anatomical character like this, especially in the case of these leg-muscles, which are known to vary unaccountably, should entitle the Drongos to family rank, any more than the possession of powder-down patches (likewise not mentioned by Mr. Oates) does the Swallow-shrikes, which alone among their order exhibit them. The Drongos, I may mention, so far as I have been able to observe, all use their feet like other arboreal shrikes, which they resemble in build, hopping when on the ground, and grasping their food in one foot—even sometimes carrying it thus. (See J. A. S. B., May 1898).

It may be objected that on the score of convenience it would be better to have all the so nearly-related genera of *Dicruridæ* bracketed together: but it seems to me that it would be more convenient and natural still to regard them all as constituting one natural but somewhat polymorphic genus. The degree of furcation of the tail and the style of crest are hardly to be considered as of generic importance, taken against the general similarity of build; and the differing forms of bill can be largely explained by reference to the habits of the species. From what Dr. Sharpe states in the British Museum Catalogue of Birds, Vol. III. pp. 230, 235, it may be seen that a distinct gradation exists between two such extreme forms as the shrike-like, purely zoophagous *Dicrurus ater* and the slender-billed, partially melliphagous *Chibia hottentotta*: and if these can be united, I see no reason why the genus should not be made to embrace the entire family.



C. C. Mondul, del. et lith.

CHLAENOPAGURUS ANDERSONI ♂ × 1½.

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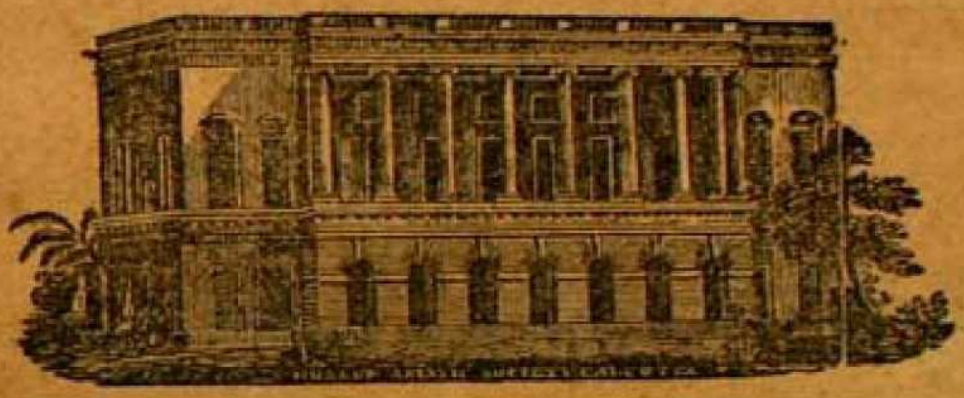

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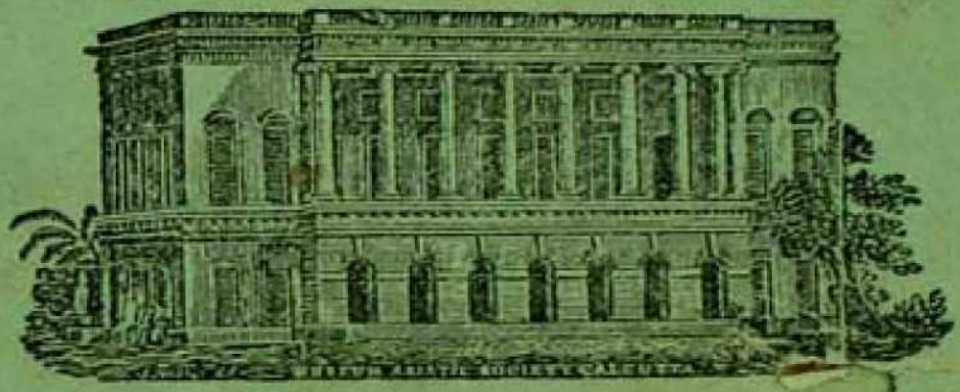

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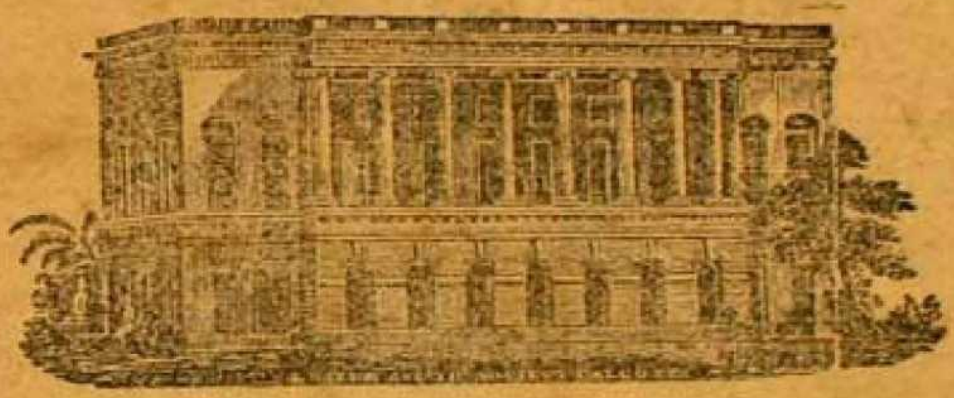

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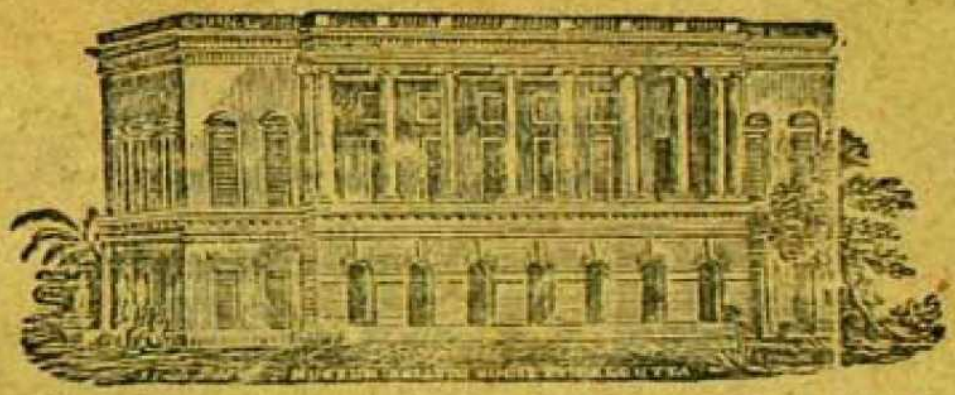

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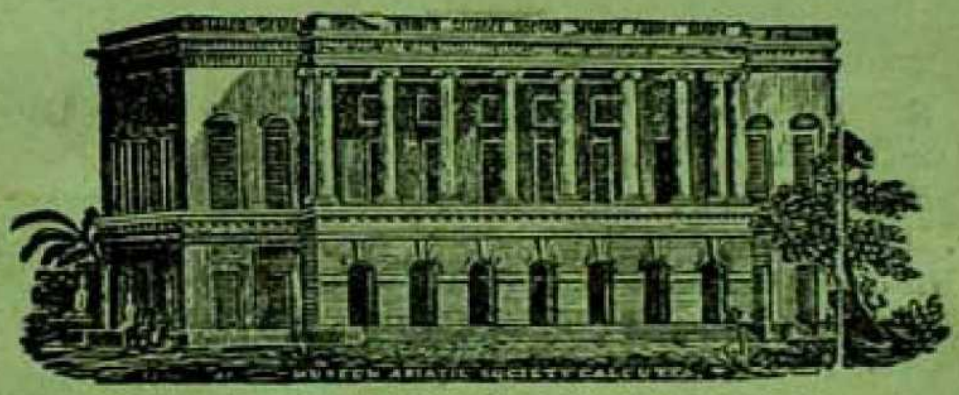

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